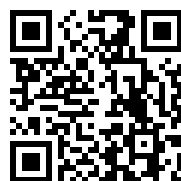


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BROADBENT  
HARVEY BULL  
SOUTHAMPTON











# ARMY MEDICAL DEPARTMENT

# REPORT

**FOR THE YEAR 1893.**

**WITH APPENDIX.**

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**VOLUME XXXV.**

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TO THE RIGHT HONOURABLE  
  
THE SECRETARY OF STATE FOR WAR.

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SIR,

I HAVE the honour to submit the accompanying  
Report on the Health and Sanitary Condition of the  
Army for 1893.

I have the honour to be,

SIR,

Your most obedient

Humble Servant,

W. A. MACKINNON,

*Director-General.*

MEDICAL DIVISION, WAR OFFICE,  
5th December 1894,

.



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## ARMY MEDICAL DEPARTMENT REPORT FOR 1893.

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### HEALTH OF THE TROOPS AT HOME AND ABROAD.

The statistics concerning the health of the troops at home are favourable. *Troops at Home and Abroad.* There was a serious outbreak of enteric fever at Aldershot. Influenza still caused a large amount of sickness, but was not quite so prevalent as in 1892. For all forms of venereal affection there was a slight decrease in the admission rate, but the constantly sick rate showed a fractional increase. There is no other point concerning the health of the troops in the United Kingdom calling for special notice.

In the Colonies the following points are worthy of notice. At Gibraltar, the admission rate was higher than in 1892, owing to the prevalence of simple continued fever. The sick rate for venereal affections showed a considerable increase. At Malta there was an outbreak of enteric fever, which after investigation was attributed to contaminated water. Malarial fever was also very prevalent, but the cases were mild in character. At Cyprus, venereal affections are stated to be the chief cause of inefficiency. In Canada the health of the troops was excellent. In Bermuda, enteric fever was rather prevalent. In the West Indies the health was fair, but the Senior Medical Officer of the Barbados Command reports that venereal cases were the principal cause of sickness. In South Africa the health of the troops was better than in 1892; but at Mauritius the contrary was unfortunately the case. Malarial fevers of a severe and fatal type were epidemic in the island during the greater part of 1893, and many of the cases were of the type designated "malignant" by the local medical practitioners. Observation shows that prolonged residence in Mauritius increases the liability to malarial fevers, and that there is no such thing as acclimatisation as regards pure-blooded Europeans; residence in this colony, even when attacks of malarial fever are escaped, inducing a general deterioration of the health. In Ceylon, the health shows a considerable improvement on 1892. In China the bad health of the troops, as at Mauritius, was due to malarial fevers. The majority of the cases occurred during the rainy season. In the Straits Settlements the health of the troops was most satisfactory.

In Egypt, as at Cyprus and in the Barbados Command, the chief cause of inefficiency was due to venereal affections, nearly a third of the total number of admissions having been due to these diseases. Enteric fever was not so prevalent as in 1892, but the general health of the troops was not very satisfactory.

In India the health of the troops was fairly good. In Bengal, enteric fever was not so prevalent, and cholera showed a very marked decline. Venereal affections, on the other hand, were more numerous and very prevalent, some of the cases being of a most virulent type. In Madras there was only one case of cholera, but, as in Bengal, venereal disease was more prevalent than in the previous year; otherwise there is no special outbreak of sickness to record. In Bombay the health of the troops was very good. There were fewer cases of enteric fever, and the men attacked were as a rule young and of recent arrival in the country; cholera was also less prevalent. Venereal affections, however, showed an increase—as in the other two Presidencies.

*Troops at Home and Abroad.*

The statistics of some of the most important of the results of sickness, in every Command in which the troops were stationed, are exhibited in the following Table :—

1893.

White Troops.	Average Strength.	Admitted into Hospital.	Died.	Sent Home as Invalids.	Discharged as Invalids.	Constantly non-effective from Sickness.
<b>Troops at Home and Abroad</b>	<b>202,125</b>	<b>204,255</b>	<b>1,896</b>	<b>2,404</b>	<b>2,880</b>	<b>12,143·27</b>
United Kingdom	100,105	75,234	524	—	1,605	4414·49
Gibraltar	4,743	3,780	13	70	40	259·87
Malta	7,161	5,433	75	195	103	349·91
Cyprus	550	373	1	27	16	25·25
Egypt	5,073	6,753	69	73	49	417·15
Canada	1,421	721	3	19	17	32·12
Bermuda	1,390	642	12	6	8	35·79
West Indies	1,261	1,310	8	28	21	84·64
South Africa and St. Helena	3,214	2,930	17	79	38	176·21
Mauritius	551	1,001	10	82	15	41·29
Ceylon	1,436	1,160	10	19	13	69·34
China	1,414	2,015	18	25	14	115·97
Straits Settlements	1,223	1,064	4	13	7	71·19
India	69,865	98,983	919	1,769	734	6050·05
On board Ship	2,718	2,856	13	—	—	—

1893.

White Troops.	Ratio per 1,000 of Strength.					Average sick-time to each Soldier.	Average duration of each Case of Sickness.
	Admitted.	Died.	Sent Home as Invalids.	Discharged as Invalids.	Constantly non-effective from Sickness.		
<b>Troops at Home and Abroad</b>	<b>1010·5</b>	<b>8·30</b>	<b>24·21</b>	<b>13·30</b>	<b>60·90</b>	<b>22·23</b>	<b>22·01</b>
United Kingdom	751·6	5·13	—	15·70	44·10	16·10	21·42
Gibraltar	796·9	2·74	14·76	8·43	54·79	20·00	25·09
Malta	758·7	10·47	27·23	14·38	48·86	17·84	23·51
Cyprus	678·2	1·82	49·09	29·09	45·90	16·75	24·70
Egypt	1331·2	13·60	14·19	9·66	82·23	30·01	22·55
Canada	507·4	2·11	13·37	11·96	22·60	8·25	16·26
Bermuda	461·9	8·63	4·32	5·75	25·75	9·39	20·35
West Indies	1038·8	6·34	22·20	16·65	67·12	24·50	23·58
South Africa and St. Helena	911·6	5·29	24·58	11·82	54·83	20·01	21·95
Mauritius	1816·7	18·14	148·82	27·22	74·94	27·35	15·06
Ceylon	807·8	6·96	13·23	9·05	48·29	17·62	21·82
China	1425·0	12·73	17·68	9·90	82·01	29·93	21·00
Straits Settlements	870·0	3·27	10·63	5·72	58·21	21·28	24·46
India	1416·8	13·15	25·32	10·51	86·60	31·61	22·31
On board Ship	1050·8	4·78	—	—	—	—	—

\* Calculated on strength, excluding men detached (2,123).

† Calculated on strength, including men detached.

‡ Calculated on strength, excluding United Kingdom and troops on board ship.

§ Calculated on strength, including men detached, and excluding troops on board ship.

|| Calculations exclude men detached and troops on board ship.



# REPORT FOR 1893.

8

1883 to 1892.

White Troops.	Aggregate strength for 10 years.	Admitted into Hospital.	Deaths.	Sent Home as In-valids.	Dis-charged as In-valids.	Con-stantly non-effective from Sick-ness.
<b>Troops at Home and Abroad</b>	<b>1,885,893</b>	<b>1,953,215</b>	<b>18,176</b>	<b>25,247</b>	<b>29,206</b>	<b>105,584</b>
United Kingdom	947,847	758,737	5,297	—	16,646	42,646
Gibraltar	46,497	35,607	247	1,046	400	2,154
Malta	59,553	40,065	488	1,250	711	2,628
Cyprus	6,159	4,981	51	98	38	256
Egypt	56,552	67,863	1,815	3,921	1,406	4,078
Canada	13,886	7,915	68	283	217	439
Bermuda	13,956	8,164	141	212	138	428
West Indies	10,408	11,198	105	243	138	599
South Africa and St. Helena	33,876	27,681	238	1,030	581	1,785
Mauritius	4,508	6,977	78	198	67	337
Ceylon	10,608	11,581	132	274	142	635
China	12,129	13,552	125	304	302	637
Straits Settlements	10,907	13,327	76	248	302	742
India	632,669	916,281	9,625	16,140	8,425	48,220
On board Ship	26,388	29,336	190	—	—	—

*Troops at Home and Abroad.*

1883 to 1892.

White Troops.	Ratio per 1,000 of Strength.					Average sick-time to each Soldier.	Average duration of each Case of Sick-ness.
	Ad-mitted.	Died.	Sent Home as In-valids.	Dis-charged as In-valids.	Con-stantly non-effective from Sick-ness.		
<b>Troops at Home and Abroad</b>	<b>1035·7</b>	<b>9·53</b>	<b>27·69</b>	<b>15·54</b>	<b>56·78</b>	<b>20·72</b>	<b>20·03</b>
United Kingdom	800·5	5·47	—	17·19	44·99	16·42	20·51
Gibraltar	765·8	5·31	22·49	8·60	46·32	16·91	22·08
Malta	672·7	8·19	20·99	11·94	44·13	16·10	23·94
Cyprus	800·6	8·28	15·91	6·17	41·56	15·17	18·95
Egypt	1200·0	23·25	69·33	24·86	72·29	26·82	21·94
Canada	572·0	4·91	20·45	15·68	31·73	11·58	20·24
Bermuda	585·0	10·10	15·19	9·53	30·67	11·19	19·13
West Indies	1075·9	10·09	23·35	13·26	57·55	21·00	19·52
South Africa and St. Helena	817·1	7·02	30·40	17·15	52·69	19·23	23·53
Mauritius	1547·7	17·30	43·92	14·86	74·75	27·28	17·63
Ceylon	1092·6	12·44	25·83	13·38	59·86	21·85	20·01
China	1117·3	10·30	25·06	13·11	52·56	19·18	17·17
Straits Settlements	1221·9	6·97	22·74	13·11	68·10	24·85	20·34
India	1448·3	15·21	25·51	13·32	76·22	27·82	19·21
On board Ship	1073·8	7·20	—	—	—	—	—

## II.—ON THE HEALTH OF THE TROOPS SERVING IN THE UNITED KINGDOM.

### *Sickness and Mortality.*

#### *United Kingdom.*

The average strength of warrant officers, non-commissioned officers and men serving in the United Kingdom during the year 1893, was, according to the annual returns furnished by medical officers, 100,105. This does not include certain men detached from their corps, the average number of whom is computed to have been 2,123.

The most important of the statistics of sickness and mortality among the troops quartered in the three great divisions of the Kingdom, England and Wales, Scotland, and Ireland, and also among those in the United Kingdom as a whole, are shown in the following table :—

1893.	Average Strength.	Admissions.	Deaths.	Invalids.	Constantly Sick.
England and Wales - -	72,272	57,154	398	1,184	3389·55
Scotland - - - -	3,421	2,150	21	62	92·10
Ireland - - - -	24,412	15,830	105	359	932·84
United Kingdom -	100,105	75,234	524	1,605	4414·49

(continued.)

	Ratios per 1,000 of Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.
	Admissions.	Deaths.*	In-validing.*	Constantly Sick.		
England and Wales - -	790·8	5·43	16·14	46·90	Days. 17·12	Days. 21·65
Scotland - - - -	628·5	6·11	18·06	26·92	9·83	15·64
Ireland - - - -	652·5	4·13	14·11	38·21	13·95	21·37
United Kingdom -	751·6	5·13	15·70	44·10	16·10	21·42

\* Calculated on strength, including men detached (England and Wales, 1,039; Scotland, 11; Ireland, 1,023), 2,123 in number.

Comparing the above with the corresponding table in the previous year it is observed that in England and Wales the admission rate shows a decline of 1·6 per 1,000, the death rate an increase of 1·00, and the constantly sick rate also an increase of 1·95. The average sick time to each soldier was longer by just over half a day, and the average duration of each case of sickness by nearly a whole day. Compared with the average ratios for the preceding seven years the admission rate has declined by 13·2, but the death and constantly sick ratios both show an increase, though only fractional. The average sick time to each soldier and the average duration of each case of sickness are longer by about a third and two-thirds of a day respectively.

The admission, death, and constantly sick rates in Scotland are all higher than in the preceding year, by 55·4, 1·52, and 2·14 per 1,000 respectively. The

average sick time to each soldier was longer by two-thirds of a day, but the average duration of each case of sickness shorter by about a fifth of a day. Compared with the average rates for the previous seven years the admission and constantly sick rates show a decline of 38·5 and 2·89 per 1,000 respectively, but the death rate shows an increase of ·59. The average sick time and average duration of each case of sickness were shorter in this comparison by just over a day and by two-thirds of a day respectively.

In Ireland, as compared with the previous year, there is a decline in the admission, death, and constantly sick rates of 48·5, ·09, and ·93 per 1,000 respectively. The sick time to each soldier is shorter by over a third of a day, but the average duration of each case of sickness longer by nearly a whole day. In comparison with the rates for the previous seven years there is also a decrease in the admission rate of 66·8, in the death rate of ·72, and in the constantly sick rate of 1·62 per 1,000. The average sick time and duration of cases show a decline of over half a day in the former, but an increase of over a day in the latter.

In the United Kingdom, as a whole, the admission rate shows a decline of 9·7 per 1,000 as compared with 1892, but the death and constantly sick rates have increased by ·75 and 1·35 respectively. The average sick time to each soldier was longer by nearly half a day, and the average duration of each case of sickness by nearly a whole day. In comparison with the previous ten years there is a decrease in the admission rate of 48·9, in the death rate of ·34, and in the constantly sick rate of ·89. The average sick time was shorter by a third of a day, but the duration of each case of sickness longer by nearly a day. The total loss by death and final discharge was 2,129 men, equal to a ratio of 20·83 per 1,000, above the rate of the previous year by 2·07.

The principal statistics of sickness and mortality, arranged according to the different groups and orders of diseases, are given in Abstract 1. for the whole of the troops in the United Kingdom, and in Abstracts A., B., and C. for the troops quartered in England and Wales, Scotland, and Ireland respectively.

**GENERAL DISEASES.—Diseases dependent on Morbid Poisons.**—There were 8 cases of *small-pox* against 6 in 1892. The admissions for *other eruptive fevers* numbered 1,463, with 14 deaths.

*Scarlet Fever* caused 843 admissions and 14 deaths. Of these 764 occurred in England and Wales, principally in the Aldershot, North-eastern, and Woolwich Districts. In Scotland there were only 7 cases. In Ireland 72 cases occurred, principally in the Dublin and Belfast Districts. Of the 14 deaths 12 occurred in England, 5 being at Aldershot. *Measles* caused 157 admissions but no deaths. Of the remaining cases of eruptive fevers, 440 were *cow-pox*, 9 *chicken-pox*, and 14 *epidemic rose rash*.

*Enteric Fever.*—There were 151 admissions and 22 deaths, against 132 and 23 in 1892. The admission rate 1·5 is above the last year's rate by ·2 and also the previous decennial rate by a similar figure. The death rate was ·21 as compared with ·22 in 1892, and ·29 the average of the previous 10 years. The per-centage of mortality to attack was 14·6, as contrasted with 17·4 in 1892. In England and Wales there were 103 admissions and 16 deaths. In Scotland only 3 admissions. In Ireland there were 45 cases, with 6 deaths. In England the largest number of cases in any station was 49 at Aldershot with 9 deaths. Most of the cases occurred in the Marlborough Lines, the sanitary condition of which has been investigated by a special committee. The next largest number of cases was 8 at Bodmin, with 1 death. The cause was attributed to the water supply. There were 5 cases each at Sunderland and Shoburyness. In the former the general insanitary condition in the neighbourhood was supposed to be the cause. In the latter no insanitary defects could be discovered in the barracks, but the neighbouring village of Shoburyness is most insanitary. The remaining cases were scattered over a large number of stations, but no serious outbreak was brought to notice. In Ireland, out of the 45 cases reported, 25 with 3 deaths occurred in Dublin. The exact cause is not known, but Dublin, as stated in last year's report, is notoriously unhealthy where enteric fever is concerned.

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*Other Continued Fevers* caused 459 admissions, being in the ratio of 4·6 per 1,000. Compared with last year there is an increase of ·8 per 1,000.

*Dysentery* caused 46 admissions and 1 death, as against 34 and no death in 1892. *Influenza* caused 1,676 admissions and 2 deaths, the equivalent ratios being 16·7 and ·02 per 1,000, as against 17·9 and ·05, the rates for last year. The largest number of cases in England and Wales occurred in the South-Eastern, Aldershot, and Home Districts. In Ireland the cases occurred principally in the Curragh and Dublin Districts. There were 46 cases in Scotland. The remaining admissions in sub-group 1 included 46 of mumps and 4 of diphtheria, one of which proved fatal.

*Malarial Fevers* caused 587 admissions with a ratio of 5·9 per 1,000, lower fractionally than both last year's rate and the average for the previous seven years. Ague accounted for 572 cases, remittent fever for 4, and malarial cachexia for 11.

*Septic Diseases* caused 242 admissions and 15 deaths, or ratios of 2·4 and ·15 per 1,000, higher than last year's rates by ·8 and ·09 respectively. Of the total cases erysipelas caused 234 and 10 deaths.

*Venereal Diseases.*—The admissions for *primary syphilis* were 5,694, or a rate of 56·9 per 1,000, compared with 66·7 in 1892. The number of men constantly sick was 579·26, or a ratio of 5·79, compared with 6·12 in 1892 and 6·35 the average rate for the previous seven years. In England and Wales the admission and constantly sick rates were 65·5 and 6·67, both lower than in 1892. In Scotland these rates were 25·7 and 2·09, about identical with those of last year. In Ireland the ratios equalled 35·8 and 3·69 per 1,000, both being considerably below those for 1892.

Simple venereal ulcer caused 1,764 admissions, and 133·13 men were constantly sick, the ratios being 17·6 and 1·33 per 1,000 respectively. If the sickness from this cause be added to that from primary syphilis, it is seen that the admission rate for primary venereal sores in the United Kingdom was 74·5 per 1,000, and the constantly sick rate 7·12. As compared with the rates for the previous year there is a decrease of 4·6 per 1,000 in the former, but an increase of ·10 in the latter. Taking the previous seven years' average rate in comparison there is a decrease of 17·3 and ·80 respectively. In England and Wales the admission rate was 83·5 and the constantly sick rate 8·04, showing, as compared with last year, a decrease of 2·3 in the former, and an increase of ·43 in the latter. Compared with the average of the previous seven years there is a decrease in both these rates of 14·7 and ·52 per 1,000 respectively. In Scotland the rates were 44·1 and 2·97, being an increase of 3·4 and ·05 on last year's rates, but showing a decrease of 11·3 and 1·01 when compared with the average rates for the previous seven years. In Ireland the admission and constantly sick ratios were 52·2 and 4·97, compared with 66·1 and 5·95 in 1892, and 79·5 and 6·71 the average rates of the previous seven years.

*Secondary Syphilis.*—The admissions for this disease in the United Kingdom numbered 3,188. There were 6 deaths, and 331·59 men were constantly sick from this cause. The admission rate was 31·8, and the constantly sick rate 3·31. As compared with 1892 there is a decrease in both rates of 2·0 and ·03 per 1,000 respectively, and in comparison with the average rates for the previous seven years one of 5·2 and ·06 respectively. In England and Wales the rates equalled 35·1 and 3·74, compared with 37·4 and 3·74 in 1892, and 39·5 and 3·66 the average rates for the previous seven years. In Scotland there was a decrease in all the rates, and this was also the case in Ireland.

*Gonorrhœa.*—The admissions numbered 8,838, and the average constantly sick was 626·04. The equivalent ratios were 88·3 and 6·25, the former being the same as, and the latter showing a slight increase compared with, last year. In comparison with the seven years' average rate there is a decrease of 6·5 in the admission rate, but an increase of ·07 in the constantly sick rate. In England and Wales the admission and constantly sick rates were 93·8 and 6·64, an increase in each case on the last year's ratios of 1·5 and ·25 per 1,000. As regards comparison with the seven years' average rates there is a decrease of 3·4 in the admission rate, but an increase of ·24 in the constantly sick rate. In Scotland the ratios were 86·5 and 4·81 respectively, an increase on both

rates and in both comparisons. In Ireland the ratios were 72·3 and 5·32 per 1,000. In this case there is also a decrease in both rates and in both comparisons. *United Kingdom.*

Taking all forms of venereal disease together the admissions were 19,484, and the average number constantly sick 1670·02, the total admission ratio being 194·6 per 1,000, and the constantly sick rate 16·68. As compared with the previous year there is a decrease of 6·6 per 1,000 in the admission rate, but an increase of ·22 in the constantly sick rate. Compared with the seven years' average rates there is a decrease in the former of 29·0 and in the latter of ·79. In England and Wales alone the ratios for admissions and constantly sick were 212·4 and 18·42 per 1,000, a decrease in the former of 3·1, but an increase in the latter of ·68. Compared with the seven years' average rates there is a decrease in both cases. In Scotland these rates equalled 149·0 and 9·07, compared with 133·2 and 7·90 in 1892, and 159·6 and 9·81 per 1,000, the average rates for the previous seven years. In Ireland the admission rate was 148·6, and the constantly sick rate 12·62. In comparison with 1892 and the average of the previous seven years there is a substantial decrease in all these rates.

The greatest prevalence of venereal disease in any district was in the Channel Islands 327·5, this was followed by the Home district with 291·2, the Eastern with 250·3, the Woolwich with 250·1, the Western with 233·8, and the Dublin with 222·2 per 1,000. The district showing the lowest rate of prevalence was that of Cork with 92·4. In the previous year the greatest prevalence was in the Home district, followed by the Channel Islands, and Dublin districts. The lowest rate, as in the present year, was in the Cork district, 86·3 per 1,000.

Compared with corresponding ratios in the previous year increase of admission rate is observed in eight districts, in the Belfast by as much as 53·8, in Dublin by 49·7, and in Aldershot by 36·9. In the Channel Islands the admission rate decreased by 48·4, in the Woolwich district by 41·1, and in the Thames by 26·9. In the Home district the admission rate was almost identical with that of the preceding year.

*Parasitic Diseases* numbered 27 as against 33 in the previous year.

*Scoury* caused 1 admission. *Alcoholism* 152 and 5 deaths, 7 of the admissions were for delirium tremens.

*Debility and malformations* caused 692 admissions, being in the ratio of 6·9 per 1,000 which was below last year's rate.

*Rheumatism* caused 3,609 admissions and 8 deaths (including that of a man absent from his corps), the respective ratios being 36·1 and ·08 per 1,000, as against 35·6 and ·06 in 1892. Out of the total number of admissions 393 were for rheumatic fever, England showing 296 of these, Scotland 5, and Ireland 92. The deaths were 6 in England, 1 in Scotland, and 1 in Ireland, and 6 were due to rheumatic fever.

*Tubercular Diseases.*—For these diseases 306 admissions and 78 deaths (including those of 6 men absent from their corps) are recorded, the respective ratios being 3·1 and ·76 per 1,000, almost identical with the rates for the previous year, and only slightly lower than the average rate for the previous seven years. Of the total number of admissions 291 were for tubercle of lung, and 69 of the deaths were due to this cause. Of these 209 admissions and 46 deaths were in England, 8 admissions and 3 deaths in Scotland, and 74 admissions and 20 deaths in Ireland.

*Other diseases of Group D.* caused 464 admissions and 17 deaths, including those of 3 men detached from their corps, being in the ratios of 4·6 and ·17 per 1,000, the first showing a decrease of ·6, but the latter an increase of ·6 as compared with last year. Amongst the admissions were 274 for non-malignant new growths, 98 for anæmia, 16 for purpura, 13 for malignant new growth, and 11 for diabetes. Of the deaths, 11 were due to malignant new growth, 4 to diabetes, and 2 to purpura.

*LOCAL DISEASES.—Diseases of the Nervous System.*—There were 824 admissions and 32 deaths, including that of a man absent from his corps, being in the ratios of 8·2 and ·31 per 1,000 as against 8·7 and ·25 in the previous year. The diseases causing most admissions were neuralgia 333, and epilepsy 210. Of the 138 cases of mental disease 58 were admitted for dementia, 32 for melancholia, and 29 for mania. The deaths included 9 of



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inflammation of membranes of brain, 5 of apoplexy, 4 of paralysis, and 3 of cerebral hæmorrhage.

*Diseases of the Eye* caused 1,069 admissions, being in the ratio of 10·7 per 1,000, slightly under the rate of the previous year. Out of the total number of admissions 644 were for conjunctivitis, 110 for keratitis, and 89 for iritis.

*Diseases of other Organs of Special Senses.*—898 admissions are returned with a ratio of 9·0 per 1,000, being an increase on last year's rate of 1·0. There were no deaths. Of the admissions 865 were for affections of the ear and 33 for those of the nose.

*Diseases of the Circulatory System* caused 939 admissions and 44 deaths, including those of 2 men detached from their corps. The corresponding ratios were 9·4 and ·43 per 1,000, being slightly above those of last year, and almost identical with those for the seven years' average. Of the admissions 410 were for palpitation, 334 for valve disease of heart, and 139 for varicose veins. Of the deaths 24 were due to valve disease of heart, 5 to aneurysm of aorta, 4 to fatty degeneration of heart, and 3 to pericarditis.

*Diseases of the Respiratory System.*—6,128 admissions and 132 deaths, including those of 10 men detached from their corps, are recorded, the ratios being 61·2 and 1·29 per 1,000. Compared with last year these rates show a decrease of 7·9 and ·04 respectively, and in comparison with the average rates for the previous seven years there is also a decrease of 6·8 and ·12 per 1,000 respectively. Of the total admissions bronchitic affections show 4,643 admissions, pneumonia 781, and pleurisy 364. The majority of the deaths were due to pneumonia in 93 cases, pneumonic phthisis in 15, bronchitis in 9, pleurisy in 7, and hæmoptysis in 2.

*Diseases of the Digestive System* caused 12,917 admissions and 43 deaths, including those of 3 men detached from their corps, being in the ratios of 129·0 and ·42 per 1,000, as against 120·6 and ·26 in 1892, and 105·4 and ·35 the average rates of the previous seven years. Of the admissions, 9,292 were for affections of the mouth and throat, 1,165 for dyspepsia, 678 for diarrhoea, and hepatitis, including jaundice, 335. Of the deaths 13 were due to peritonitis, 4 to enteritis, and 3 each to abscess of liver, hepatitis, and cirrhosis of liver.

*Diseases of the Lymphatic and Glandular System.*—These caused 1,540 admissions, the ratio being 15·4 as compared with 14·7 last year. Nearly the whole of the admissions were due to inflammation and suppuration of glands. There were no deaths.

*Diseases of the Urinary System.*—240 admissions and 16 deaths are recorded, including that of a man detached from his corps, being in the ratios of 2·4 and ·16 respectively, as against 2·7 and ·10 the rates for last year. The principal causes of admission were incontinence of urine 102 cases, Bright's disease 46 cases, nephritis 27 cases, and cystitis 24 cases. The deaths were due in 13 instances to Bright's disease, in 2 to nephritis, and in 1 to abscess of kidney.

*Diseases of the Generative System* caused 3,213 admissions and 2 deaths, the corresponding ratios being 32·1 and ·02 per 1,000. In comparison with the rates for the previous year there is an increase in the admission rate of 6·6, and in the death rate of ·02, and as compared with the average rates for the preceding seven years a decrease of 6·5, and an increase of ·01 respectively. The principal causes of admission, apart from simple venereal ulcer, were balanitis 607 cases, orchitis 526, stricture of urethra 110, varicocele 81, and phimosis 46. The 2 deaths were due to extravasation of urine.

*Diseases of the Organs of Locomotion* caused 850 admissions but no deaths. The admission ratio was 8·5 compared with 8·3 per 1,000 in 1892. The principal causes of admission were synovitis 517 cases, contraction 69, flat foot 54, and ostitis and inflamed bursa 52 cases each.

*Diseases of the Connective Tissue.*—For these diseases 2,461 admissions and 2 deaths, including that of a man detached from his corps, are returned, being in the ratios of 24·6 and ·02 per 1,000 respectively, compared with 22·8 and ·01 in 1892, and 23·0 and ·02 the average rates for the previous seven years. The large majority of the cases were due to abscess, as were also the 2 deaths.

*Diseases of the Skin* gave 6,602 admissions, but no death is recorded. The admission rate, 65·9, compares favourably with 71·2 the rate in 1892, and with

77·3 the average rate of the preceding 7 years. Itch caused the largest number of cases, 1,874, then boils, 1,210, followed by ulcer, 802, eczema, 784, and whitlow. 675. *United Kingdom.*

**Poisons.**—The number of admissions was 19, and there were 7 deaths. The causes were 7 fish, 4 oxalic acid, 2 poisoned wound, 2 sting, and 1 each opium, belladonna, chloroform vapour, and decayed meat. The deaths were due to fish 2 cases, and cyanide of potassium (suicidal), oxalic acid, opium, chloroform vapour, and morphia (suicidal) one case each.

**Injuries.**—9,524 admissions and 76 deaths are returned, being in the ratios of 95·1 and 74 respectively. Compared with the rates for 1892 there is a decrease of 7·3 per 1,000 in the former, and an increase of 14 in the latter, whilst compared with the respective seven years' average rates there is a decrease of 4·1 in the former, and an increase of 03 in the latter.

The admissions for general injuries were 26, and there were 43 deaths, including those of 2 men detached from their corps. Sunstroke caused 13 admissions, multiple injury 5 admissions and 6 deaths, heat apoplexy 2 admissions and 1 death, effects of heat 2 admissions, shock 2 admissions, effects of irritants 1 admission, asphyxia by submersion 1 admission and 29 deaths (2 suicidal), while the remaining deaths were due to effects of cold and asphyxia by suffocation, 2 cases each, and asphyxia by plugging of air passages, lightning stroke, and asphyxia by strangulation (suicidal), one case each.

Local injuries caused 9,498 admissions and 33 deaths, including those of 2 men detached from their corps. The corresponding ratios, 94·9 and 32 per 1,000, compare favourably with the rates for last year, 102·2 and 32, and also with the average rates for the preceding seven years, 99·2 and 34. The principal causes of admission were, as usual, contusions, wounds, and sprains. Of the deaths, 18 were due to gunshot wounds, of which 15 were suicidal, 6 deaths were due to fracture, 4 to cut-throat, all suicidal, and there was one death, each due to the following causes: contusion, concussion of brain, dislocation, compression of brain, and rupture of lung.

**Suicides.**—There were 24 cases among the troops in the United Kingdom. This is the same number as last year. The average for the previous ten years was 21. The methods adopted were gunshot 15, cut-throat 4 drowning 2, strangulation 1, and poisoning by morphia and cyanide of potassium one each. With regard to motives, 13 cases showed no motive, 4 were due to drink, 4 to financial troubles, 2 to domestic troubles, and 1 to depression of spirits. The verdicts at the inquests held were "temporary insanity" in 23 cases, and *felo de se* in 1 case. The average age of the men was 30, and average service 9½ years.

**Surgical Operations.**—Among the numerous surgical operations the following may be alluded to:—2 amputations of thigh and one of shoulder joint, and 20 minor amputations, 3 cases of excision (2 of upper extremities and 1 of lower extremities), 9 cases of excision of eye-ball, 3 of excision of veins, 2 of excision of rib, 1 of Cock's operation, and numerous other operations, such as tracheotomy, for the relief of fistula, for the removal of hæmorrhoids, &c.

**Invaliding.**—The number of men discharged the service as medically unfit during the year was 1,605, being in the ratio of 15·70 per 1,000, which is above last year's rate by 1·32, but lower than the decennial average rate by 1·50. In England and Wales alone there were 1,184 men discharged, the ratio being 16·14, which, as compared with 1892, is 1·61 higher, but in comparison with the seven years' average rate is lower by 17 per 1,000. In Scotland the number was 62, with a ratio of 18·06, which is lower in both comparisons by 1·37 and 1·13 per 1,000 respectively. In Ireland there were 359 men discharged, equal to a ratio of 14·11, which is fractionally higher in both comparisons.

The principal causes of invaliding were diseases of the circulatory system, 358 men being invalided, or a rate of 3·50, next diseases of the nervous system 238 cases, with a rate of 2·33, then tubercular diseases 164, with a rate of 1·60, then diseases of other organs of special senses 107, with a rate of 1·05, diseases of the organs of locomotion came next with 92 cases and a ratio of 0·90, then diseases of the digestive system 86 cases, with a rate of 0·84, then debility 82 cases, or 0·80 per 1,000, and secondary syphilis 76 cases, or a rate of 0·74.

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Kingdom.*

The following tables have been prepared to show the influence of age and length of service on sickness, mortality, and invaliding among the troops serving in the United Kingdom during the year :—

Ages.	Average Strength.	Ad-missions.	Deaths.	In-validated.	Ratios per 1,000 of Strength.		
					Ad-missions.	Mor-tality.	In-validing.
Under 20 years -	32,305	26,552	100	405	821·9	3·10	12·54
From 20 to 25 years -	35,928	37,019	179	800	1055·4	4·98	22·27
„ 25 „ 30 „ -	17,756	7,565	94	228	426·0	5·29	12·84
„ 30 „ 35 „ -	7,775	1,896	60	84	245·9	7·72	10·80
„ 35 „ 40 „ -	4,235	942	49	62	222·4	11·57	14·64
40 years and upwards -	2,106	360	42	26	170·9	19·94	12·35
Total -	100,105	75,234	524	1,605	751·6	5·13*	15·70*

\* Calculated on strength, including men detached (2,123).

From the above it will be seen that the highest admission rate, at any age, was between 20 and 25 years, being 1055·4, the next highest, 821·9, was among men under 20.

The mortality was lowest in those under 20 years, and increase follows in regular sequence at each subsequent quinquennium. The invaliding ratios follow a sequence similar to that of 1892, except between the ages of 35 and 40 years, where a considerable increase is observable.

Service.	Average Strength.	Ad-missions.	Deaths.	In-validated.	Ratios per 1,000 of Strength.		
					Ad-missions.	Mor-tality.	In-validing.
Under 1 year -	30,584	32,227	122	511	1055·7	3·99	16·71
From 1 to 2 years -	19,014	16,466	70	390	866·0	3·68	20·51
„ 2 „ 3 „ -	10,260	8,246	44	173	803·7	4·29	16·86
„ 3 „ 4 „ -	7,500	4,526	27	95	603·5	3·80	12·67
„ 4 „ 5 „ -	6,354	3,309	23	65	520·8	3·62	10·23
„ 5 „ 10 „ -	14,961	7,559	100	233	505·2	6·68	15·57
10 years and upwards -	11,432	2,901	138	138	253·8	12·07	12·07
Total -	100,105	75,234	524	1,605	751·6	5·13*	15·70*

\* Calculated on strength, including men detached (2,123).

This table shows that the highest admission rate was among men in their first year of service, differing by nearly 20 per cent. from those in their second year. The remaining rates show a steady decline until the last period, when the rate dropped by nearly one half.

The mortality rate was highest among those over 10 years' service, and lowest between 3 and 4 years' service. The invaliding rate was highest in those between 1 and 2 years' service, and lowest among those between 4 and 5 years' service.

As compared with previous year the admission ratios show a decline among men of from 1 to 2 years' service, 3 to 4 years, 5 to 10 years, and over 10 years. The remaining three periods show an increase. The mortality rates show a decline among those of from 4 to 5 years' service, but an increase in all other periods. A decrease in the invaliding rate occurred among men of from 3 to 4 years, 4 to 5 years, and 5 to 10 years' service, but an increase is found in all the other periods.

The admissions, deaths, invalids discharged the service, and average number constantly sick in the various military districts, are shown in the following table :—

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Kingdom.

Military Districts.	Average Annual Strength.	Admissions into Hospital.	Deaths.			Invalids discharged the Service.	Average Number Constantly Sick.	Ratio per 1,000 of Mean Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.
			With the Regiment.	Absent from the Regiment.	Total.			Admitted into Hospital.	Died.	Invalids discharged the Service.	Constantly Sick.		
1. North-eastern	-	3,473	27	-	27	32	179·17	692·1	5·38	10·36	35·70	days. 15·08	days. 18·83
2. North-western	-	3,551	26	2	28	60	152·08	637·9	5·33	11·42	28·95	10·56	16·56
3. Eastern	-	4,446	30	1	31	100	228·26	838·1	5·84	15·84	45·01	15·70	18·73
4. Western	-	5,268	44	2	46	77	298·77	765·8	6·70	11·21	45·08	15·72	20·53
5. Southern	-	6,061	45	1	46	155	409·57	751·2	5·71	19·25	50·87	18·57	24·72
6. Thames	-	3,895	19	1	20	42	166·34	777·7	5·13	10·78	42·70	15·58	20·04
7. South-eastern	-	7,653	35	5	40	115	354·88	921·1	5·23	15·03	46·37	16·93	18·88
8. Home	-	7,614	41	2	43	154	468·92	838·1	5·65	20·23	61·59	22·46	26·82
9. Woolwich	-	5,906	34	-	34	92	313·30	862·3	5·76	15·58	53·05	19·36	22·45
10. Aldershot	-	15,046	67	10	77	290	740·91	767·4	5·12	19·27	46·24	17·97	23·42
11. Channel Isles	-	1,477	6	-	6	47	80·35	688·1	3·61	28·26	46·31	17·63	19·55
12. Scottish	-	3,421	20	1	21	63	92·10	638·5	6·14	18·12	26·92	9·83	15·63
13. Belfast	-	3,892	17	-	17	56	120·48	568·1	5·47	15·73	31·69	11·57	19·34
14. Dublin	-	8,461	36	2	38	144	409·01	751·7	4·46	16·98	46·23	17·00	23·42
15. Cork	-	8,046	32	8	40	79	218·32	561·8	4·97	9·82	27·13	9·90	17·63
16. Curragh	-	2,760	9	1	10	80	185·03	676·0	2·45	19·59	45·32	16·54	24·47
Total	-	75,234	498	36	524	1,686	4414·40	751·6	5·13	15·70	44·10	16·10	21·42
Average of 10 years, 1883 to 1892.	-	947,547	4,916	331	5,297	16,046	42646·00	800·5	5·47	17·20	44·99	16·43	20·51

\* Total deaths and invalids calculated on strength including men detached.

*United Kingdom.*

The highest rate of admission in any district was in the South Eastern district, 921·1 per 1,000, followed by the Channel Islands, 888·1, and Woolwich, 862·3. The lowest rate was in the Cork district, 561·8 per 1,000, followed by the Belfast, 598·1, and the Scottish, 628·5. Compared with corresponding ratios in the previous year, the admission ratios for the North-eastern, Western, Thames, South-eastern, Woolwich, Channel Islands, Scottish, and Curragh districts show an increase; in all the remainder a decrease is observed, the most marked being 145·0 in the Dublin district.

As regards mortality, the highest rate, 6·70 per 1,000, was in the Western district, followed by the Scottish with 6·14, and the Eastern with 5·84. The lowest rate was in the Curragh, 2·45, then the Channel Islands, 3·61, and Belfast, 4·47 per 1,000. Compared with the rates for 1892, the Western, Southern, Woolwich, Belfast, Cork and Curragh districts show a decrease, the remaining ones show an increase. The greatest increase is shown in the Eastern district, 3·54 per 1,000.

Turning to invaliding, the three highest ratios were in the Channel Islands, 28·26, the Home district, 20·23, and the Curragh district, 19·59, per 1,000, and the districts showing the three lowest rates were the Cork, 9·82, the North-eastern, 10·36, and the Thames, 10·78. Compared with last year's rates, decrease is noticed in the North-eastern, Eastern, Scottish, and Cork districts, and increase in the remainder.

The average number constantly sick gave the highest ratios in the following districts:—Home, 61·59, Woolwich, 53·05, and Southern, 50·87. The lowest rates were in the Scottish, 26·92, Cork, 27·13, and North-western 28·95. Compared with the rates for 1892, decrease occurred in the North-eastern, North-western, Eastern, South-eastern, Belfast, Dublin, and Cork districts, and increase in the remainder.

The average sick time to each soldier was longest in the Home district, 22·48 days, followed by the Woolwich district with 19·36, and the Southern district with 18·57. The shortest sick time was in the Scottish district, 9·83 days, then in the Cork district, 9·90, and then in the North-western, 10·56. Compared with previous year decrease is observed in the North-eastern, North-western, Eastern, South-eastern, Belfast, Dublin, and Cork districts, and increase in all the remaining districts.

The average duration of each case of sickness was longest in the Home district, 26·82 days, followed by the Southern with 24·72, and the Curragh with 24·47; the shortest sick time was in the Scottish district, 15·63 days, followed by the North-western with 16·56, and the Cork with 17·63. In comparison with last year decrease is noticed in the rates of the North-eastern, Eastern, Western, South-eastern, Scottish, Cork, and Curragh districts, and increase in all the remainder.

A table is here given showing the statistics of sickness and mortality among troops quartered in the large camps at Aldershot, Colchester, Shorncliffe, the Curragh, &c., at which the sick are treated locally, as compared with those of troops stationed in 37 large towns where the average strength of non-commissioned officers and men was over 500:—

1893.	Average Annual Strength.	Admissions.	Died.	Average constantly Sick.	Ratio per 1,000 of Mean Strength.		
					Admissions.	Deaths.	Constantly Sick.
Camps . . . .	24,733	19,367	97	1195·19	783·0	3·92	48·32
Towns . . . .	53,882	43,223	289	2600·39	802·2	5·38	48·26

It will be noticed that the admission ratio among men quartered in towns is in excess of that of men quartered in camps by 19·2; in the previous year there was an excess of admission rate among men in towns of 50·8. The death rate is shown to be higher among men quartered in towns than among men quartered in camps, in the preceding year also this was the case. As to the ratios constantly sick in the two classes the difference between

them is only fractional, but the highest as in the previous year was among *United Kingdom* men in camps. Comparing the ratios of sickness and mortality among men quartered in camps, and also of those quartered in towns with corresponding results for the year 1892, it will be observed that increase has occurred in the former in the admission, death, and constantly sick rates, while in the latter the admission rate has declined, and the death and constantly sick rates have increased.

The following table, compiled from the Returns of Principal Medical Officers, shows the admissions, deaths, number of men invalided, and number constantly sick, from each arm of the service, with the ratios per 1,000 of the strength, and the corresponding ratios for the previous 10 years:—

Arms of the Service.	Average Strength.	Admitted into Hospital.	Died.	Discharged as Invalids.	Average Number constantly Sick.	Annual Ratio per 1,000 of Strength.				Average of 10 Years, 1883-92.			
						Admitted.	Died.	Invalided.	Constantly Sick.	Admitted.	Died.	Invalided.	Constantly Sick.
Household Cavalry	1,185	895	10	21	48'41	755'3	8'44	17'72	40'85	645'5	3'13	20'25	33'00
Cavalry -	10,577	8,702	58	169	506'73	822'7	5'48	15'98	47'91	864'7	4'56	19'63	48'05
Royal Artillery -	17,292	12,068	106	276	746'62	697'9	6'13	15'56	43'18	738'1	6'32	18'55	44'18
Royal Engineers -	4,221	2,075	24	40	119'69	491'6	5'68	9'48	23'36	580'6	6'06	12'35	32'73
Foot Guards -	5,526	4,717	23	116	399'84	853'6	4'16	20'99	72'36	944'2	5'82	22'41	63'08
Infantry -	42,479	36,214	178	811	2096'91	852'5	4'19	19'09	49'36	371'7	4'80	17'00	40'58
Regimental Depôts	11,820	7,752	89	119	320'76	655'8	7'53	10'07	27'14	731'4	7'64	15'36	30'43
Garrison Staff and Departments.	7,005	2,811	36	53	175'63	401'3	5'14	7'57	25'07	556'8	6'43	10'77	33'50

The highest admission ratio in any arm of the service was 853'6 in the Foot Guards, the next being 852'5 in the Infantry. In previous year the highest was in the Foot Guards, and next in the Cavalry. The lowest was 401'3 in the Garrison Staff and Departments, and next 491'6 in the Royal Engineers. In previous year this was also the case.

The highest mortality rate was in the Household Cavalry, being 8'44, followed by Regimental Depôts, 7'53. In previous year the highest rate was in the Garrison Staff and Departments, 5'75, followed by the Royal Artillery, 5'50. The lowest rate was in the Foot Guards, 4'16, followed by the Infantry, with 4'19. In the previous year the lowest was in the Infantry, 3'72, followed by Cavalry, 3'93.

Invaliding was highest in the Foot Guards, being 20'99, followed by the Infantry, 19'09. In previous year the highest rate was in the same arm of the Service. The lowest rate was 7'57 in the Garrison Staff and Departments, followed by 9'48 in the Royal Engineers. In previous year the lowest rates were in the same arms.

The rate for constant inefficiency for sickness was highest in the Foot Guards, being 72'36, followed by 49'36 in the Infantry. In previous year the highest also was in Foot Guards, 68'53, followed by the Cavalry, 47'34. The lowest rate was 25'07 in Garrison Staff and Departments, followed by Regimental Depôts, 27'14. In previous year the lowest rates were in the same arms of the service.

In Abstract XXXIX. will be found a table showing the more important of the health statistics of individual corps serving in the United Kingdom during the year.

The most important statistics of sickness and mortality amongst officers, women, and children, according to the several groups and orders of diseases, are shown in Abstract D., compiled from the Annual Returns of Principal Medical Officers.

*United Kingdom.*

**OFFICERS.**—The average strength, was 4,026, and there were 1,411 cases of illness, and 16 deaths. The equivalent ratios per 1,000 were 350·4 for sickness and 3·97 for mortality. In the preceding year the corresponding ratios were 376·5 and 4·74 per 1,000.

**General Diseases.**—*Diseases dependent on Morbid Poisons.*—*Eruptive fevers* caused 34 attacks of illness, being 1 of small-pox, 15 scarlet fever, 14 measles, 3 chicken, and 1 cow-pox. There were no deaths. *Enteric fever* caused 8 attacks of illness and 1 death. Of the admissions, 3 occurred in Dublin, 2 at Aldershot, and one each at Dover, Hythe, and Gosport. The fatal case was at Dover.

One case of *sporadic cholera* occurred at Aldershot.

*Dysentery* caused 6 admissions. *Influenza* furnished 210 cases, one more than in the previous year. One death occurred from this cause.

Two cases of mumps completed the attacks of illness in the first sub-group of diseases.

*Malarial Fevers* caused 51 admissions and no deaths. 3 of the cases were remittent fever.

**Local Diseases.**—*Diseases of the Circulatory System* caused 12 admissions and 4 deaths. The latter were due to syncope, 2 cases, and dilatation of the heart and aneurism of aorta, 1 case each.

*Diseases of the Respiratory System* caused 196 admissions and 2 deaths, the principal cause of attack being bronchitic affections, 169 cases. The deaths were due to pneumonia.

*Diseases of the Digestive System* caused 258 attacks of illness, but no death. The principal causes were throat affections, diarrhoea, and dyspepsia.

Only one attack was due to *poisons*, this was caused by "stinging insects."

**Injuries.**—238 are returned with 4 deaths, the ratios being 59·1 and '99 per 1,000. Last year the corresponding rates were 68·1 and '75 per 1,000. Of the 4 deaths, 2 were from gunshot wounds, one accidental, the other suicidal; verdict, "temporary insanity." Motive unknown. The other 2 deaths were from fracture. The principal causes of admission were sprains and contusions. One death is recorded under the heading of "cause unknown."

**WOMEN.**—The average strength was 10,379, and there were 4,480 attacks of illness and 51 deaths; the ratios being 431·6 and 4·90. In the previous year the corresponding ratios were 452·9 and 5·09 per 1,000.

**General Diseases.**—*Diseases dependent on Morbid Poisons.*—*Eruptive fevers* caused 50 admissions and 1 death. The cases comprised measles, 22, scarlet fever, 21, cow-pox, 4, epidemic rose rash, 2, and chicken-pox, 1. The death was due to scarlet fever. *Enteric fever* caused 3 admissions, all at Dublin. *Influenza* caused 305 cases as compared with 396 in the previous year. One death was due to this cause. *Septic diseases* caused 28 attacks of illness, and 6 deaths; of the latter, 5 were due to septicæmia, and 1 to erysipelas. *Debility* caused 606 attacks of illness, giving a rate of 58·4 per 1,000 as compared with 60·5 in the preceding year. There were no deaths.

**Local Diseases.**—*Diseases of the Respiratory System* caused 689 attacks of illness and 8 deaths, being in the ratios of 66·4 and '77 per 1,000, lower than the corresponding rates of the previous year by 5·1 and '31 respectively. The large majority of the cases were due to bronchitic affections, and the deaths were due to pneumonia and pleurisy, 3 cases each, and to bronchitis and pneumonic phthisis, one case each.

*Diseases of the Digestive System.*—1,045 cases of illness are recorded under this head, with 7 deaths, the admission ratio being 2·8 lower, and the death-rate '38 per 1,000 higher than in the preceding year. The principal causes of sickness were dyspepsia, throat affections, and diarrhoea. The deaths were due to peritonitis, 5 cases, and hepatitis and abscess of liver 1 case each.

*Diseases of Generative System* caused 492 attacks and 3 deaths, equal to rates of 47·4 and '29 per 1,000. In the previous year the rates were 51·3 and '10 respectively. The principal causes of sickness were affections connected with pregnancy, and functional and symptomatic diseases. The deaths were due to post-partum hæmorrhage 2 cases, and pelvic cellulitis 1 case.

*Injuries.*—70 are returned, none fatal. The most frequent causes were wounds, contusions, burns and scalds, and sprains. *United Kingdom.*

**CHILDREN.**—The average strength was 20,634, and there were 12,517 cases of illness and 468 deaths, the ratios being 606·6 and 22·68, as compared with 581·0 and 20·35 per 1,000 in 1892.

*General Diseases.*—*Diseases dependent on Morbid Poisons.*—*Eruptive fevers.*—2,642 cases and 62 deaths are recorded under this head, the principal causes being measles 1,893, scarlet fever 395 cases, and chicken-pox 269. 43 of the deaths were due to measles, 16 to scarlet fever, and 3 to epidemic rose rash. *Enteric Fever* caused 19 attacks and 1 death. The cases occurred as follows:—5 at Aldershot, 3 each at Beverley and Devonport, 2 at Shoburyness, and one each at Bodmin, Cork, Dublin, Portsmouth, Warley, and York.

*Influenza* caused 327 cases as against 453 in 1892. All the districts, with the exception of Belfast, were more or less affected.

*Diphtheria* caused 20 admissions and 8 deaths, as against 14 and 6 in the previous year. The cases occurred—4 each at Shorncliffe and Guildford, 3 each at Woolwich and Jersey, 2 at Kingston-on-Thames, and one each at Devonport, Queenstown, Shrewsbury, and Taunton. 3 deaths took place at Jersey and Shorncliffe, and one at Guildford and Kingston-on-Thames respectively.

*Venereal Affections* caused 22 attacks of inherited syphilis, of which 3 were fatal, as compared with 29 cases and 4 deaths in 1892.—*Developmental Diseases*—debility, immaturity at birth, &c.—caused 578 cases of sickness and 46 deaths, against 454 and 43 in the preceding year.

*Local Diseases.*—*Diseases of the Nervous System* caused 227 attacks of illness and 71 deaths, or ratios of 11·0 and 3·44, against 13·2 and 3·53 per 1,000 respectively in 1892. The majority of the attacks were due to convulsions; the deaths were due to convulsions in 52 cases, inflammation of brain and membranes 13 cases, chronic hydrocephalus 3 cases, and paralysis, trismus, and laryngismus stridulus, 1 case each.

*Diseases of the Respiratory System* caused 3,364 cases of illness and 134 deaths, as against 3,151 and 120 in the previous year. Of the total cases 3,129 were due to bronchitic affections and 124 to pneumonia. The deaths were from bronchitis 80, pneumonia 25, croup 18, catarrh 7, laryngitis 1, collapse of lung 1, congestion of lung 1, and pneumonic phthisis 1.

*Diseases of the Digestive System.*—Under this head, 2,466 cases and 73 deaths are recorded, the ratios being 119·5 and 3·54 per 1,000, as compared with 116·2 and 2·65 in the year preceding. The principal causes of sickness were diarrhoea, sore throat, dyspepsia, and teething in the order named. 36 of the deaths were due to diarrhoea, 14 to enteritis, 10 to teething, 7 to stomach affections, 2 to jaundice, and one each to sore throat, intussusception, peritonitis, and congestion of liver.

*Injuries.*—461 are recorded, and there were 6 deaths. The ratios per 1,000 were 22·3 and 29 per 1,000 respectively. The principal causes were wounds, contusions, burns and scalds, and fractures. The deaths were due to burns and scalds in 3 instances, to drowning in 2, and the last was due to multiple injury.



*United  
Kingdom.*

### VACCINATION.

In the following table are shown the conditions as to vaccination of all recruits found fit on inspection for the service, together with the proportion per 1,000 of each condition :—

1893.	Number of Recruits found on inspection fit for the Service.	Proportion per 1,000.
Had marks of vaccination - -	36,008	953·4
Had marks of small-pox - -	615	16·3
Had neither marks of vaccination nor of small-pox - - - }	1,146	30·3
Total - -	37,769	1000·0

Compared with the similar table for the previous year, a decrease of 13·6 per 1,000 is observed amongst recruits bearing marks of vaccination, with an increase of 10·5 among those bearing marks of small-pox, and one of 3·1 among those bearing neither marks of vaccination nor small-pox.

The following tables, compiled from the annual returns of Principal Medical Officers, show the number of vaccinations performed during the year, with the proportions per 1,000 of successful or modified results or of failures, whether vaccinated with fresh or preserved lymph.

United  
Kingdom.

Results.	Vaccinated during the Year.				Proportion per 1,000.					
	Arm to Arm.		From Preserved Lymph.		Total.		Arm to Arm.		From Preserved Lymph.	
	Primary Vaccination.	Re-Vaccination.	Primary Vaccination.	Re-Vaccination.	Primary Vaccination.	Re-Vaccination.	Primary Vaccination.	Re-Vaccination.	Primary Vaccination.	Re-Vaccination.
<b>TABLE I.—Recruits.</b>										
Perfect vaccine pustules	5	600	145	22,781	150	23,381	1,000.0	755.6	814.6	680.5
Modified vaccine pustules	—	135	19	6,986	19	7,121	—	170.3	108.7	811.7
Failures	—	58	14	3,228	14	3,286	—	73.1	78.7	97.8
Total	5	793	178	32,995	183	33,788	1,000.0	1,000.0	1,000.0	1,000.0
<b>TABLE II.—Soldiers other than Recruits.</b>										
Perfect vaccine pustules	—	15	1	708	1	721	—	248.6	500.0	464.5
Modified vaccine pustules	—	28	1	392	1	420	—	432.8	500.0	257.9
Failures	—	15	—	482	—	437	—	258.6	—	277.6
Total	—	58	2	1,520	2	1,578	—	1,000.0	1,000.0	1,000.0
<b>TABLE III.—Soldiers and Recruits.</b>										
Perfect vaccine pustules	5	615	146	23,487	151	24,102	1,000.0	732.7	811.1	680.5
Modified vaccine pustules	—	163	20	7,378	20	7,541	—	191.5	111.1	213.8
Failures	—	73	14	3,680	14	3,723	—	85.8	77.8	105.7
Total	5	851	180	34,515	185	35,366	1,000.0	1,000.0	1,000.0	1,000.0

*United  
Kingdom.*

The total number of operations for vaccination during the year was 35,551, less than in the preceding year by 3,017. The number of recruits vaccinated was 33,971, which shows a decrease of 2,908, and the number of soldiers other than recruits who were vaccinated was (1,580) is also less than in 1892 by 109.

The number of recruits found on inspection fit for service during the year was 37,769; therefore, the recruits vaccinated being 33,971, there were 3,798 unaccounted for. This is probably due to the fact that some recruits joined from the Militia, in which force they had already been vaccinated; some recruits joined too late in the year for their vaccination to appear in the yearly returns, and in some cases men deserted after enlistment before there had been time to vaccinate them.

In comparing the vaccination of recruits with the previous year, it is shown in the primary arm-to-arm vaccination that there was an increase of 217·2 per 1,000 in the proportion of perfect vaccine pustules, this is, however, due to the fact that the number of cases was few and in each the result perfect. In arm-to-arm re-vaccination there was an increase of 52·8 in the proportion of perfect results, and of 4·6 in modified results, with a decrease of 57·4 in failures.

The results of vaccination with preserved lymph are satisfactory, there was a decrease of 3·8 per 1,000 only in perfect pustules, one of 45·0 in modified pustules, and an increase of 48·8 in failures amongst the primary vaccinations. In the re-vaccinations a decrease of 43·5 in perfect pustules, an increase of 31·9 in modified pustules, and of 11·6 in failures occurred. The total results of primary vaccination among recruits show an increase of 14·7 per 1,000 in the proportion of perfect pustules, a decrease of 41·7 in that of modified results, and an increase of 27·0 in that of failures. The total results of re-vaccination among recruits give a decrease of 40·9 per 1,000 in perfect vaccine pustules, and an increase in modified vaccine vesicles and failures of 31·5 and 9·4 respectively.

In the next table is given the vaccination of soldiers, other than recruits. There were no cases of primary vaccination, and only 58 of re-vaccination from arm-to-arm, and 2 primary and 1,520 re-vaccinations from preserved lymph.

Taking all classes of soldiers together, it is observed from Table III. that, as compared with 1892, in primary vaccination there is an increase of 16·2 per 1,000 in the proportion of perfect vaccine pustules, a decrease in that of 41·9 in that of modified pustules, and an increase of 25·7 in the case of failures. In re-vaccinations there is a decrease of 41·0 in the proportion of perfect results, and an increase of 27·9 and 13·1 respectively in the case of modified results and failures.

Of the total number of operations of vaccination of soldiers, 35,551, there were 24,253 perfect results, or 682·2 per 1,000, 7,551 modified results, or 212·7 per 1,000, and 3,757 failures, or 105·1 per 1,000. Comparing these results with the corresponding proportions in the previous year, a decrease of 41·6 is found in the proportion of perfect results, and an increase of 28·0 and 13·6 respectively in the case of modified results and failures.

**WOMEN.**—The number of vaccination operations among women was 223; of these 19 were cases of primary vaccination, and 204 cases of re-vaccination; of the latter 158 cases, or 774·5, gave perfect results, 31 cases, or 152·0, gave modified results, and 15 cases, or 73·5 were failures. This shows, as compared with the previous year, an increase of 163·8 per 1,000 in the case of perfect vaccine pustules, and a decrease of 153·3 and 10·5 respectively in the case of modified pustules and failures.

**CHILDREN.**—Among children there were 251 primary arm-to-arm vaccinations, of which 243, or 968·1 per 1,000, gave perfect results, and 8, or 31·9 per 1,000, were failures. The proportion of successful results is higher by 15·8 than in the previous year. Out of 2,698 cases of primary vaccination with preserved lymph 138 were failures, the proportion of successes being 948·9, and of failures 51·1. The proportion of successes is 2·4 per 1,000 lower than last year.

Re-vaccination with preserved lymph gave 87 successes out of 91 cases; the proportion of perfect results, 956·0 per 1,000, showing an increase of 46.

The total number of primary vaccinations was 2,949, of which 146 were failures, the proportion of successful results being thus 950·5, a decrease of 9 as compared with 1892. There were 100 re-vaccinations, of which 96 were successful, a proportion of 960·0 per 1,000, an increase of 9·6 as compared with the preceding year. The total number vaccinated was 3,049, and 2,899, or 950·8 per 1,000, were successful, this ratio is practically identical with that of the previous year.

*Small-pox.*—During the year in the United Kingdom 8 men were attacked with small-pox, but no case occurred among the women or children, and no death took place. In the Colonies 5 men were attacked, but there were no admissions among women or children, and there were no deaths. In India there were 33 attacks and 4 deaths among the men, and two women were attacked. In Egypt 4 men were attacked, but there were no deaths or other admissions. There were no admissions or deaths among the troops on board ship. The total numbers are, therefore, 50 attacks and 4 deaths among the men, and 2 attacks among the women.

The ratios of attacks to strength are for men ·25, and for women ·13 per 1,000, and the ratios of mortality for men ·02 per 1,000. In the preceding year the ratios of prevalence among men and women were ·13 and ·74 respectively, and the ratio of mortality for men ·01 per 1,000.

#### ON THE RECRUITING OF THE ARMY.

The Annual Returns of Principal Medical Officers show that the number of recruits inspected during the year was 64,110; of these, 26,341, equal to a ratio of 410·87 per 1,000, were rejected as medically unfit for further service; the remaining 37,769, or 589·13 per 1,000, were found fit for the service.

The subjoined table shows the number inspected, the number rejected, and the ratios of rejections per 1,000 examined :—

TABLE I.

Number of Recruits Inspected.	Number Rejected.			Ratio of Rejections per 1,000 inspected.		
	On Inspection.	Unfit within Three Months of Enlistment.	Total.	On Inspection.	Unfit within Three Months of Enlistment.	Total.
64,110	25,999	342	26,341	405·54	5·33	410·87

From the above it will be observed that of the total number of men found unfit for service there were 342 who, having originally passed, were, within three months of their enlistment, found unlikely to become efficient soldiers. These recruits were forthwith discharged as such under the provisions of para. 124 L. (d.) Section XIX., Queen's Regulations and Orders for the Army, as all recruits pass through a period of probationary training before final acceptance. Excluding these the number of men rejected on inspection was 25,999, or 405·54 per 1,000.

Compared with the corresponding ratios in the previous year an increase of 28·08 per 1,000 is observed in the ratio of rejection on inspection, but there is a fractional decrease, ·40, in the ratio of rejection of recruits within three months of enlistment. The total ratio of rejection has increased, therefore, by 27·68 per 1,000, the ratio of men found fit for the service having declined by the same amount.

*United  
Kingdom.*

The native countries of recruits, the ratios of rejection, and the proportion per 1,000 furnished by each country are given in the following table :—

TABLE II.

Native Countries of Recruits.	Number Inspected.	Number Rejected.	Ratio Rejected per 1,000 Inspected.	Proportion per 1,000 Recruits furnished by each Country.
England and Wales . . . .	50,039	20,711	413·90	781
Scotland - . . . .	5,400	2,136	395·55	84
Ireland - . . . .	7,962	3,243	407·31	124
British Colonies and Foreign Countries . . . .	709	251	354·02	11
Total . . . .	64,110	26,341	410·87	1,000

Compared with the similar table in the report for the previous year, the ratio of rejection of recruits born in England or Wales has increased by 29·06 ; that of recruits born in Scotland by 43·41, and that of recruits born in Ireland by 17·00 per 1,000, but the ratio of rejection of recruits born in British Colonies or foreign countries has decreased by 10·16 per 1,000.

Out of 1,000 recruits inspected 781 were natives of England or Wales, 4 more than in the previous year, 84 were natives of Scotland, a decrease of 1 ; 124 were natives of Ireland, a decrease of 2, and 11 were born in British Colonies or foreign countries, as compared with 12 in the preceding year.

In the succeeding table is shown, as far as possible, the number of recruits examined for each arm of the service, the number rejected, the ratios of rejection, and the proportion for each arm of the service per 1,000 inspected. A considerable number, it will be observed, are shown under the head of General Service as the particular arm is not stated in the returns :—

TABLE III.

Arms of the Service.	Number Inspected.	Number Rejected.	Ratio of Rejections per 1,000 of Recruits Inspected for each Arm of the Service.	Proportion for each Arm of the Service per 1,000 Inspected.
Household Cavalry . . . .	355	159	447·88	6
Cavalry of the Line . . . .	3,987	1,630	408·88	62
Royal Artillery . . . .	6,790	2,800	382·92	106
Royal Engineers . . . .	1,116	409	366·49	17
Foot Guards . . . .	1,744	694	397·94	27
Infantry Regiments . . . .	36,914	15,889	430·43	576
Departmental Corps . . . .	1,607	625	388·92	25
General Service . . . .	11,597	4,335	373·80	181
Total . . . .	64,110	26,341	410·87	1,000

Compared with the return for 1892, the ratio per 1,000 rejected has increased by 71·00 per 1,000 in the Household Cavalry, by 41·72 in the Infantry, followed by the Foot Guards with 26·71, the Cavalry 19·93, and for General Service 18·72. A decrease is noted in all other arms ranging from

19·46 per 1,000 in Departmental Corps to 9·44 per 1,000 in the Royal Artillery. *United Kingdom.*

The proportion of recruits for each arm of the service per 1,000 inspected, as compared with 1892, shows no change in the Household Cavalry, but an increase is observed in the Infantry, Departmental Corps, and General Service of 16, 2, and 17 respectively, and a decrease of 12 in the Foot Guards, and 11 in the Cavalry, 7 in the Artillery, and 5 in the Engineers.

In the next table are given the occupations of recruits previous to enlistment, the ratio rejected per 1,000 of each group of occupations, and the proportion of each group in every 1,000 men inspected :—

TABLE IV.

Occupations of Recruits.	Number inspected.	Number rejected.	Ratio rejected per 1,000 inspected.	Proportion of each Group in 1,000 Recruits inspected.
1. Labourers, Servants, Husbandmen, &c.	43,124	17,998	417·35	673
2. Manufacturing Artisans (as Clothworkers, Weavers, Lace Makers, &c.).	9,170	4,024	438·82	143
3. Mechanics employed in Occupations favourable to physical development (as Smiths, Carpenters, Masons, &c.).	5,902	2,312	385·85	98
4. Shopmen and Clerks -	3,659	1,563	427·16	57
5. Professional Occupations, Students, &c.	628	222	353·50	10
6. Boys under 17 years of age -	1,537	222	144·43	24
Total - - -	64,110	28,341	410·87	1,000

Compared with the previous year it will be seen that there is an increase in the proportion rejected in Classes I., II., III., and V. of 35·77, 15·33, 23·29, and 25·56 per 1,000 respectively, whilst a decrease of 10·43 and 44·96 per 1,000 will be found in Classes IV. and VI.

The proportions of the different classes of occupations among 1,000 recruits inspected, compared with 1892, shows an increase in Classes I. and II. of 16 and 2 respectively, whilst a decrease of 16, 1, and 1 is found in Classes III., IV., and VI., Class V. remaining as in the previous year.

The following table gives the number of recruits rejected on inspection during the year according to the different causes of rejection arranged in classes, and the ratio per 1,000 of rejection in each class. Similar information is given regarding recruits unfit within three months of enlistment :—

TABLE V.

Causes of Rejections in Classes.	Total inspected, 64,110.			
	Number rejected on Inspection.	Ratio per 1,000 rejected on Inspection.	Unfit within Three Months of Enlistment.	Ratio per 1,000 rejected as Unfit within Three Months of Enlistment.
1. Syphilis - - - -	312	4·87	2	·03
2. Scrofula - - - -	183	2·85	3	·05
3. Tubercle - - - -	35	·54	8	·13
4. Impaired Constitution and Debility.	607	9·47	20	·31
5. Other General Diseases - -	169	2·64	8	·13
6. Diseases of Nervous System -	61	·95	34	·53

*United  
Kingdom.*

Causes of Rejections in Classes.	Total inspected, 64,110.			
	Number rejected on Inspection.	Ratio per 1,000 rejected on Inspection.	Unfit within Three Months of Enlistment.	Ratio per 1,000 rejected as Unfit within Three Months of Enlistment.
7. Weakness of Intellect - - -	107	1·67	53	·83
8. Defective Vision - - -	2,681	41·51	14	·22
9. Diseases of Eyes and Eyelids -	112	1·75	4	·06
10. Diseases of Nose and Mouth -	28	·44	—	—
11. Disease of Ears - - -	166	2·59	2	·03
12. Deafness - - -	110	1·72	5	·08
13. Impediment of Speech - -	78	1·22	1	·01
14. Disease of Heart - - -	1,137	17·74	62	·81
15. Disease of Arteries (Aneurysm) -	4	·06	1	·01
16. Disease of Veins (Varix) - -	1,097	17·11	10	·16
17. Disease of Lungs (except Tubercle).	54	·84	6	·09
18. Loss or Decay of many Teeth -	983	15·33	1	·01
19. Hernia - - -	548	8·55	27	·42
20. Laxity of Abdominal Rings -	139	2·17	—	—
21. Hæmorrhoids - - -	87	1·36	—	—
22. Diseases of the Urinary Organs -	24	·37	7	·11
23. Varicocele - - -	824	12·85	10	·16
24. Other Diseases of the Genital Organs (not Syphilitic).	81	1·26	2	·03
25. Defects of Upper Extremities, from Fracture, Contraction, Luxation, &c.	492	7·67	6	·09
26. Defects of Lower Extremities, from Fracture, Contraction, Luxation, &c.	923	14·40	19	·30
27. Flat Feet - - -	798	12·45	17	·26
28. Diseases of Joints - - -	161	2·51	5	·08
29. Other Affections of Bones and Muscles.	127	1·98	7	·11
30. Ulcers, Wounds, and Cicatrices -	126	1·97	—	—
31. Other Affections of the Cutaneous System.	221	3·45	2	·03
32. Malformation of Ears - -	6	·09	—	—
33. Malformation of Nose and Mouth	11	·17	—	—
34. Malformation of Chest and Spine	369	5·76	5	·08
35. Malformation of Urinary or Genital Organs.	25	·39	—	—
36. Under Height - - -	2,131	33·24	2	·03
37. Under Chest Measurement -	6,959	108·55	5	·08
38. Under Weight - - -	2,564	39·89	—	—
39. Apparent Age not in accordance with Regulations.	663	10·34	1	·01
40. Not likely to become efficient -	799	12·46	3	·05
41. Over height - - -	17	·26	—	—
Total rejected - - -	25,999	406·54	342	5·33

Defective development, that is under the standard for height, chest measurement, and weight, caused a large number of rejections, the ratio being 181.78 per 1,000, or an increase of 25.55 per 1,000 over the previous year. As in 1892 deficiency of chest girth gave the the highest ratio of rejections, 108.55 per 1,000, or 12.65 per 1,000 higher than the preceding year. Under weight was the cause of 39.99 per 1,000 men being rejected, an increase of 12.37 over the rate for 1892. Under height was the cause of rejection in 2,131 instances, an increase of .53 per 1,000 over last year's rate.

Among other causes of rejection the most frequent was, as usual, defective vision, which gave a ratio of 41.51, this rate is, however, lower than that of the previous year by .84 per 1,000. Next in order comes heart affections 17.74 per 1,000, diseases of the veins 17.11, loss of teeth 15.33, and defects of lower extremities 14.40 per 1,000.

Among the recruits found unfit within three months of enlistment, the chief causes of rejection were weakness of intellect, heart disease, and affections of the nervous system.

*Ages, Heights, Weights, and Chest Measurements of all Recruits finally approved for Service during the Year.*

In Table No. VI. are given the ages of all recruits finally approved for service, and the proportion of each age per 10,000:—

TABLE VI.

Ages.				Numbers finally approved for Service.	Proportion per 10,000.
Boys under 17 years -	-	-	-	1,315	348
From 17 to 18 „ -	-	-	-	491	130
„ 18 to 19 „ -	-	-	-	15,395	4,076
„ 19 to 20 „ -	-	-	-	7,718	2,044
„ 20 to 21 „ -	-	-	-	4,162	1,102
„ 21 to 22 „ -	-	-	-	3,146	833
„ 22 to 23 „ -	-	-	-	2,348	620
„ 23 to 24 „ -	-	-	-	1,601	424
„ 24 to 25 „ -	-	-	-	1,281	339
25 years and upwards	-	-	-	317	84
Total	-	-	-	37,769	10,000

The greatest number passed fit was between 18 and 19 years of age. The total number being 15,395, or in the proportion of 4,076 per 10,000, over one-third of the entire number enlisted at all ages. This is a decrease of 363 per 10,000 as compared with 1892. The next largest number was that between 19 and 20 years of age (7,718), followed by 4,162 between the ages of 20 and 21.



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Kingdom.

The next table shows the heights of recruits finally approved, and the proportion of each height per 10,000. It also gives the heights of recruits finally approved, arranged in series according to age, together with the proportion per 10,000 of each height at each age:—

TABLE VII.

Heights of Recruits finally approved for Service.			Boys under 17 Years.	Between 17 and 18.	Between 18 and 19.	Between 19 and 20.	Between 20 and 21.	Between 21 and 22.	Between 22 and 23.	Between 23 and 24.	Between 24 and 25.	25 Years and upwards.	Total at each Height.
ft. in.	ft. in.												
Under 5	3	-	1,062	20	36	6	7	3	2	—	1	2	1,139
5	3 to 5	4	105	89	1,579	507	137	98	33	31	17	7	2,603
5	4 to 5	5	69	142	4,159	1,374	716	417	368	229	165	31	7,670
5	5 to 5	6	46	98	3,908	1,796	937	675	466	322	262	48	8,558
5	6 to 5	7	18	74	2,261	1,402	782	634	463	326	241	65	6,296
5	7 to 5	8	8	41	1,092	1,138	623	490	341	242	215	61	4,761
5	8 to 5	9	4	16	997	728	450	374	288	202	160	44	3,263
5	9 to 5	10	2	6	555	463	284	244	191	143	117	32	2,036
5	10 to 5	11	1	2	180	165	118	119	96	55	46	19	800
5	11 to 6	0	—	2	74	86	60	59	44	29	38	5	397
6	0 and upwards		—	1	44	54	48	33	31	22	19	4	256
Totals at each age			1,315	491	15,305	7,718	4,162	3,146	2,343	1,601	1,281	317	57,769

Heights of Recruits finally approved for Service.			Proportions per 10,000 at each Age.										Total Proportion of each Height per 10,000.
			Boys under 17 Years.	Between 17 and 18.	Between 18 and 19.	Between 19 and 20.	Between 20 and 21.	Between 21 and 22.	Between 22 and 23.	Between 23 and 24.	Between 24 and 25.	25 Years and upwards.	
ft. in.	ft. in.												
Under 5	3	-	8,076	407	23	8	17	9	8	—	8	63	302
5	3 to 5	4	798	1,813	1,025	657	329	311	141	194	133	221	689
5	4 to 5	5	525	2,892	2,702	1,780	1,721	1,325	1,572	1,430	1,288	978	2,031
5	5 to 5	6	350	1,906	2,539	2,327	2,251	2,146	1,989	2,011	2,045	1,514	2,266
5	6 to 5	7	137	1,507	1,469	1,817	1,879	2,015	2,061	2,036	1,881	2,051	1,664
5	7 to 5	8	61	835	1,041	1,474	1,497	1,558	1,455	1,512	1,678	1,924	1,260
5	8 to 5	9	30	326	648	943	1,081	1,189	1,229	1,262	1,249	1,388	864
5	9 to 5	10	15	122	360	589	682	776	815	894	914	1,009	539
5	10 to 5	11	8	41	117	214	284	378	410	343	359	568	212
5	11 to 6	0	—	41	48	111	144	188	188	181	297	158	106
6	0 and upwards		—	20	28	70	115	105	132	137	146	126	68
Total			10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000

The proportion of recruits under 5 feet 3 inches in height per 10,000 approved has decreased by 57, as compared with 1892, that of 5 feet 3 inches to 5 feet 4 inches by 278, from 5 feet 7 inches to 5 feet 8 inches and 5 feet 11 inches to 6 feet by 8 respectively, and for over 6 feet by 7.

On the other hand, an increase of 24 per 10,000 is found in those between *United Kingdom* 5 feet 4 inches and 5 feet 5 inches, of 228 in those between 5 feet 5 inches and 5 feet 6 inches, of 52 between 5 feet 6 inches and 5 feet 7 inches, of 5 between 5 feet 8 inches and 5 feet 9 inches, of 48 between 5 feet 9 inches and 5 feet 10 inches, and of 1 between 5 feet 10 inches and 5 feet 11 inches.

Omitting boys, the highest proportion of recruits at any age of any height per 10,000 finally approved was 2,892 between 17 and 18 years of age and 5 feet 4 inches to 5 feet 5 inches in height. In 1892 the highest proportion was at the same age and height.

The next table shows the weights of the recruits who were finally approved, and the proportion of each weight per 10,000. It also shows the weights of these recruits arranged in series according to age, together with the proportion per 10,000 of each weight at each age :—

TABLE VIII.

Weights of Recruits finally approved for Service.	Boys under 17 Years.	Between 17 and 18.	Between 18 and 19.	Between 19 and 20.	Between 20 and 21.	Between 21 and 22.	Between 22 and 23.	Between 23 and 24.	Between 24 and 25.	25 Years and upwards.	Total at each Weight.
Under 100 lbs.	1,063	1	—	—	—	—	—	—	—	—	1,063
100—110 lbs.	163	25	73	47	18	5	10	—	—	—	341
110—120 "	72	215	4,927	1,370	515	272	184	80	58	14	7,707
120—130 "	12	164	6,153	2,775	1,286	856	606	357	280	43	12,513
130—140 "	5	75	3,047	2,166	1,218	1,018	730	504	373	98	9,234
140—150 "	—	9	910	958	723	586	499	378	296	81	4,440
150—160 "	1	2	244	308	285	271	205	169	156	47	1,718
160—170 "	—	—	53	78	92	103	82	87	65	19	579
Upwards of 170 lbs.	—	—	8	16	25	35	27	26	23	15	175
Totals at each age	1,315	491	15,395	7,718	4,162	3,146	2,343	1,601	1,281	317	37,769

Weights of Recruits finally approved for Service.	Proportions per 10,000 at each Age.										Total Proportion of each Weight per 10,000.
	Boys under 17 Years.	Between 17 and 18.	Between 18 and 19.	Between 19 and 20.	Between 20 and 21.	Between 21 and 22.	Between 22 and 23.	Between 23 and 24.	Between 24 and 25.	25 Years and upwards.	
Under 100 lbs.	8,076	20	—	—	—	—	—	—	—	—	281
100—110 lbs.	1,240	509	47	61	43	16	43	—	—	—	90
110—120 "	547	4,379	3,200	1,775	1,237	865	785	500	453	442	2,041
120—130 "	91	3,340	3,984	3,596	3,090	2,721	2,586	2,230	2,186	1,356	3,313
130—140 "	88	1,528	1,979	2,806	2,927	3,236	3,116	3,148	2,912	3,062	2,445
140—150 "	—	183	591	1,241	1,737	1,863	2,130	2,361	2,311	2,555	1,176
150—160 "	8	41	169	399	686	861	875	1,056	1,452	1,483	455
160—170 "	—	—	35	101	221	327	350	543	507	599	153
Upwards of 170 lbs.	—	—	5	21	60	111	115	162	179	473	46
Totals at each age	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000

*United  
Kingdom.*

As compared with the previous year a decrease of 124 has occurred in the proportion of recruits between 100 and 110 lbs. in weight per 10,000 finally approved, of 258 in those between 110 and 120 lbs., and of 63 between 120 and 130 lbs. A general increase has occurred in the proportion of recruits at all other weights.

Omitting boys, the highest proportion of recruits at any age and of any weight was 4,379 among recruits of between 17 and 18 years of age, and between 110 and 120 lbs. in weight, the next being 3,984 per 10,000 among those of from 18 to 19 years of age and between 120 and 130 lbs. in weight. In 1892 the highest proportions, 4,271 and 3,952 respectively, were amongst recruits at the same ages and weights.

In the next table is shown the chest measurements of recruits finally approved, and the proportion of each measurement per 10,000. It also shows the chest measurements of these recruits arranged in series according to age, together with the proportion per 10,000 of each chest measurement at each age.

TABLE IX.

Chest Measurement of Recruits finally approved for Service.	Boys under 17 Years.	Between 17 and 18.	Between 18 and 19.	Between 19 and 20.	Between 20 and 21.	Between 21 and 22.	Between 22 and 23.	Between 23 and 24.	Between 24 and 25.	25 Years and upwards.	Total at each Chest Measurement.
Under 31 inches .	1,113	9	5	3	—	—	—	—	—	1	1,131
31—32 inches .	139	42	169	41	15	5	2	1	2	—	416
32—33 „ .	40	132	2,733	714	225	129	65	35	20	6	4,090
33—34 „ .	18	163	6,576	2,739	1,139	759	460	253	163	45	12,314
34—35 „ .	3	121	4,361	2,673	1,618	1,145	930	621	445	96	12,013
Above 35 inches .	2	24	1,551	1,548	1,165	1,108	898	692	651	169	7,796
Totals at each age	1,315	491	15,395	7,718	4,162	3,146	2,343	1,601	1,281	317	37,709

Chest Measurement of Recruits finally approved for Service.	Proportions per 10,000 at each Age.										Total proportion of each Chest Measurement per 10,000.
	Boys under 17 Years.	Between 17 and 18.	Between 18 and 19.	Between 19 and 20.	Between 20 and 21.	Between 21 and 22.	Between 22 and 23.	Between 23 and 24.	Between 24 and 25.	25 Years and upwards.	
Under 31 inches .	8,464	183	3	4	—	—	—	—	—	32	300
31—32 inches .	1,057	855	109	53	36	16	9	6	16	—	110
32—33 „ .	304	2,689	1,775	925	541	410	277	219	166	189	1,083
33—34 „ .	157	3,320	4,272	3,540	2,737	2,413	1,963	1,574	1,272	1,420	3,260
34—35 „ .	23	2,464	2,833	3,463	3,887	3,639	3,969	3,879	3,474	3,028	3,181
Above 35 inches .	15	489	1,008	2,006	2,799	3,522	3,782	4,322	5,082	5,431	2,064
Total	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000

As compared with the preceding year a decrease of 1 is shown in the proportion of recruits under 31 inches, of 115 in those from 31 to 32, of 225 in those between 32 to 33, and of 30 per 10,000 in those of over 35 inches. An

increase of 155 is found in the proportion of those recruits between 33 and 34 inches, and one of 216 in those between 34 and 35 inches. *United Kingdom.*

Omitting boys, the highest proportion of recruits at any age and of any chest girth was 5,331, among men of 25 years and upwards and above 35 inches chest measurement. In previous years the highest proportions are also found at these ages; but they are, however, dependent on comparatively few inspections. Taking the age at which the greatest number of recruits are examined, it is found that the highest proportion per 10,000 was 4,272 between 33 and 34 inches chest measurement as compared with 3,998 at the same age and measurement in 1892.

From these tables it is calculated that, excluding boys under 17 years of age, the average age of recruits finally approved during the year was 19·4 years as compared with 19·3 in 1892. The average height was 5 feet 5·8 inches as compared with 5 feet 5·7 inches, the average weight 125·1 lbs. as compared with 123·8 lbs., and the average chest measurement 33·6 inches as compared with 33·5 last year.

The next table shows the state of education of recruits finally approved, together with the proportion per 1,000 of those well educated, able to read and write, able to read only, or unable to read.

TABLE X.

	Numbers finally approved.	Proportion per 1,000.
Well educated - - - -	2,838	75
Able to read and write - - - -	33,103	877
Able to read only - - - -	613	16
Unable to read - - - -	1,215	32
Total - - - -	37,769	1,000

Compared with the corresponding table for the preceding year an increase of 29 per 1,000 has taken place in the proportion of recruits returned as well educated, and one of 2 in that of recruits able to read only, but there is a decrease of 2 in the proportion of recruits returned as able to read and write, and one of 9 in that of recruits unable to read.

## HOME STATIONS.

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### SANITARY CONDITIONS.

#### *North-eastern District.*

*United  
Kingdom.*

The Principal Medical Officer, Surgeon-Colonel J. W. Maxham, M.D., states that the general sanitary arrangements in the district have been, on the whole, satisfactory. The population in the neighbourhood of Sheffield barracks is very dense, and the drainage of the locality has not been all that could be desired. During the heat and drought of last summer, the drains throughout Sunderland were offensive, and the town unhealthy. The new drainage works are proceeding, as far as possible, without disturbing the old drains, the intention being to connect the new at the last moment, doing away entirely with the old. The urinals, ashpits, barrack grounds, and enclosures have been in good sanitary condition. The barracks and buildings generally have been kept clean and well ventilated, except the infant school at York, the ventilation of which was defective. It is about to be rebuilt. The water supply has been generally satisfactory, notwithstanding the very dry summer, except at Lincoln, where it was stated to be indifferent, and a sample was analysed and reported on as of impure quality. The matter is being fully investigated. The rations have been good, and the cooking arrangements satisfactory. With the exception of an outbreak of enteric fever and a few cases of septic sore throat at Beverley, due to the accidental blocking of a drain, which was at once remedied, and an epidemic of scarlet fever at Sheffield in May and August, there has been no exceptional sickness in the district. The hospitals themselves are, on the whole, satisfactory, the exception being that at Bradford, which is very old and out of repair. It has formed the subject of frequent report. A good deal of trouble and annoyance has been caused by the bursting of the water pipes from frost. As far as possible, the hot water pipes should be in juxtaposition with the cold water pipes. The want of proper provision of means for isolation and treatment of infectious diseases occurring in the soldiers' families is much felt, as the authorities of the civil hospitals will not admit them.

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#### *North-western District.*

The Principal Medical Officer, Surgeon-Colonel H. S. Muir, M.D., reports that the health of the troops contrasts very favourably with 1892. With regard to sanitary improvements throughout the district, at Ashton-under-Lyne the ventilation of the cells has been put in thorough order. At Burnley it is understood that large building operations are shortly to be undertaken, and it is hoped that a new hospital will be built, and the drainage put into thorough order. At Chester an isolation ward is much wanted, and the position of the mortuary is not suitable. At Fleetwood, Euston Barracks are unoccupied, and the troops located in the hutments only. The hospital is large and in a separate enclosure. Fleetwood might well be used in summer as a sanitarium for men requiring change of air. At Lichfield the ventilation of the main sewer, which was defective, has been put in good order. Ashpits have been replaced by iron bins. New barrack buildings are in course of erection, and some are near completion. At Seaforth a new block of married quarters was finished and occupied on the 15th December. The building is two-storied, and contains twelve quarters. The accommodation for examining recruits is insufficient. At Lancaster the library and reading room have been enlarged, but, as at Seaforth, increased accommodation is much wanted for the examination of recruits. At Warrington the ventilation of the officers' mess

and ante-room has been improved by Tobin's system, and a new heating apparatus placed in the guard-room. At Altcar Camp the surface drainage requires improvement, as the ground holds the water a long time in wet weather. There are gymnasia at Lichfield, Salford, Preston, Warwick, and Worcester. Modified ones at Lancaster and Seaforth. They have proved advantageous to the troops.

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*Eastern District.*

The Principal Medical Officer, Surgeon-Major-General C. H. Giraud, reports that the health of the troops has been very good, and compares favourably with former years. No disease has occurred that could be attributed to any local sanitary defect. Additional cooking apparatus has been provided at Bedford, Northampton, and Weedon. At the Cavalry Barracks, Colchester, urinals have been erected between the blocks for non-commissioned officers and men. Four 300-gallon tanks have been provided to flush the main drains, and ventilating pipes affixed to drains. At Warley, ventilating grates have been provided in all the barrack-rooms. At Norwich, ten new married quarters have been erected, and water laid on. At Landguard Fort, water has been laid on to the hut-barracks, and stand-pipes fixed for use of camp. At Northampton, the canteen premises have been improved. At Bedford, a modified gymnasium has been provided. Several minor improvements and repairs have been carried out when found necessary.

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*Western District.*

The Principal Medical Officer, Surgeon-Colonel F. H. Welch, reports that so far as tracing existent diseases to distinct causations is concerned the station reports mainly limit themselves to climatic variations as inducing diseases of respiration and rheumatic affections. The eruptive fevers are rightly relegated to the civil population, and the great prevalence and severity of venereal affections to the want of proper control, and supervision of the prostitute class. No disease has been shown to be due to insanitary defects in barracks, and the only particular form requiring notice is enteric fever, which this year caused 15 admissions amongst the men, of these (comprising 5 stations, all single instances, except at Devonport 4 and Bodmin 8), 3 originated in lodgings, 1 was a transfer from Bodmin, the 8 at Bodmin were traced to sewage contamination of the water supply, and three, developing in barracks, were probably contracted outside. During the year the new married quarters at Devonport and Elphinstone Barracks, Plymouth, have been taken into use with great advantage to the occupants. At Millbay Barracks, Plymouth, the old drainage has been rooted out, and replaced by a new system, and no enteric fever case has since occurred. The sewer discharge into the sea close to Elphinstone Barracks has been improved. At Topsham Barracks, Exeter, parts of the drainage have been replaced, drains ventilated, and the barrack-rooms above the stables greatly improved by dormer windows in roofs. Arrangements have also been made for the reception of infectious cases, amongst the married families, into the civil hospital. The results of the gymnastic exercises are good, and a gymnasium is wanted at Taunton and Newport respectively. The hospitals are in fairly good condition, but at Devonport the burned out out block remains untouched, and several other needed improvements are hung up for want of funds. At the female hospital a mortuary is much needed. At Pembroke Dock a new hospital is much wanted, as the present one consists of old wooden huts, inadequate to the needs of the station, and the proper treatment of the sick. Waiting and inspection rooms for the examination of recruits are much needed in all the recruiting depôts, except Exeter, where this want has been met.

*United  
Kingdom.*

*Southern District.*

The Principal Medical Officer, Surgeon-Major-General J. Davis, reports that the general health of the troops has been good and the sanitary condition of the several stations also satisfactory. The following requirements have been put forward:—At Hilsea the latrines attached to the double-storied barracks require enlargement and better ventilation. At Portland the main sewer and soil pipes require ventilation. At Golden Hill Fort a new system of drainage has been recommended and is about to be constructed. Amongst the sanitary improvements carried out during the year are:—Portsmouth; flushing tank provided for drains in rear of Victoria Barracks, and drainage remodelled at Head Quarter Offices. Gosport; swing doors provided for the hospital wards, and the drainage improved. Barracks, drainage improved at Forts Gomer and Blockhouse. Latrine provided at Browndown Camp, and water laid on from local company. The dampness of soldiers' rooms at Hilsea and Fort Widley remedied. Portland; the sanitary arrangements of the officers' mess and quarters improved. Western Forts, Isle of Wight, Golden Hill; culvert constructed to improve drainage of Royal Artillery camp. Additional ventilation provided to cells. Water laid on from the Freshwater Waterworks. Eastern Forts; improved water supply and drainage. Gymnastic training has much improved the health of the men and increased their physique.

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*Netley.*

The Principal Medical Officer, Surgeon-Major-General P. B. Smith, M.D., reports that the largest number of cases in hospital was on May 15th, viz., 779, and the lowest on 24th October, viz., 121. There was no overcrowding. The general sanitary condition has been good. The building formerly used as a women's hospital has been used as a hospital for infectious cases, and the house known as "Windmill Lodge" has been used for sick women. Up to date this has been found sufficient as regards space, although the Lodge is ill-adapted for the purpose.

The buildings and sanitation of the lunatic hospital are in excellent order.

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*Thames District.*

The Senior Medical Officer, Brigade Surgeon-Lieutenant-Colonel W. W. Tomlinson, reports that at Sheerness the exposed position and the fact that all the surrounding country has been reclaimed from the sea, and is low lying and marshy, militates against the healthiness of the place. At Shoeburyness the outlet of the village sewer close to the married quarters and the large amount of refuse heaped on the shore, close to ranges, from barges which convey it from London, are conducive to the spread of disease. It is believed that extensive sanitary improvements are to be undertaken. At Gravesend the ablution rooms have been altered, and hand basins are now used. The urinals attached to the barrack rooms have also been abolished. At Maidstone the three baths have now hot and cold water laid on, and can be used from 8 a.m. to 7 p.m. This is a great advantage and comfort to the men. At Gravesend the entire drainage system has been remodelled and relaid on an excellent plan. At Chatham and Brompton Barracks the main sewers were daily flushed at half ebb tide during the summer, as a precaution against cholera. This has since been continued. The overcrowding in the Garrison Schools at Brompton has been at last done away with, and must be followed by improvement in the health of both scholars and teachers. At Fort Pitt a new barrack room for the Medical Staff Corps is much required. At Gravesend

all the old pattern latrines have been taken up and replaced by Jennings' patent (continuous flush). *United Kingdom.*

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#### *South-eastern District.*

The Principal Medical Officer, Surgeon Colonel T. F. O'Dwyer, M.D., reports that at Canterbury the drainage has been very defective, but a commencement has been made to remodel it during the year, and a section of it has been completed, and the work is to be continued. The surface drainage of this station is in a bad state. Attention has been directed to it, and in time doubtless it will be dealt with. There is no doubt that the exposure of young soldiers during drills and rifle practice on a water-logged soil is productive of an increased rate of sickness from chest affections and rheumatism. During the year the cases of pneumonia were exceptionally severe. At Shorncliffe several new buildings have been erected, but it is to be regretted that some of the old hutments, which can never be made really healthy or comfortable, should have been patched up, instead of being entirely replaced. The dry earth system of conservancy is still in force, but it is difficult to work it entirely satisfactorily. It is hoped, in time, that water carriage may be substituted for it. At Hythe the system of disposal of the town refuse has been improved. A block of officers' quarters has been completed, thus removing many officers from lodgings in the town. At Lydd a new water supply from a wind-driven pump has been laid on to the camp cisterns, and the re-construction of the Royal Artillery Lines and of some subsidiary buildings is being proceeded with. The clothing of the troops has been suitable, and gymnastic training most beneficial.

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#### *Home District.*

The Acting Principal Medical Officer reports that at the Tower of London some slight overcrowding occurred during the painting of the barracks, but was obviated as much as possible. At Kneller Hall the pollution of the lake referred to last year has been stopped. At Windsor Cavalry Barracks the sanitary condition was stated to be unsatisfactory. They have been thoroughly inspected and reported on. Some improvements have already been carried out, but the general insanitary condition has been ordered to stand over for the present. At Caterham the foul and surface drainage of the hospital form one system. This has been reported to the Royal Engineer Department.

The amount of hospital accommodation is still insufficient. At Reading improvements have been made in the warming of the hospital. At Kingston-on-Thames, the ventilation of the guard room has been improved, and a leaden skirting put round the walls of the lavatories in the huts; new iron man-holes inserted in the main drains, and the barrack drains disconnected from the street sewer.

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#### *Woolwich District.*

The Principal Medical Officer, Surgeon-Colonel A. F. Churchill, M.D., reports that scarlet fever having been epidemic amongst the civil population, there is considerable increase in the number of cases of this disease amongst the troops. The whole of the Royal Artillery Barracks are old in construction, and densely occupied. In the married quarters families are still living in single rooms. The new block of married quarters at Brookhill Road will remedy much of this condition. The sewage system is old and defective, but



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no actual disease has been attributable to this, as the sewers have little or no communication with the central barrack buildings, all the latrines being external to them. The late drill of the Royal Artillery Staff has been suspended, the hour being an unsuitable one. The erection of warm water baths in the Royal Artillery Barracks out of the private funds of the Royal Artillery Canteen has been a great sanitary gain.

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#### *Aldershot Division.*

The Principal Medical Officer, Surgeon-Major-General H. F. Paterson, M.D., reports that no special causes were at work in the production of disease, except in the case of enteric fever. The number of these cases (49) appears in the majority of instances to have been connected with faulty drainage. This was more especially the case in the North Camp, where several of them appear to have been due to sewer gas and the insanitary condition of some of the huts. These huts are fast disappearing, and with this, and a remodelling of the whole system of drainage, consequent on the completion of the new brick barracks and married quarters, this disease will, it is hoped, as far as it arises from purely local causes, disappear from the Division. The hospital lines in the North Camp, which have been the subject of much correspondence, are now being gradually evacuated, the new Tournay Barracks being temporarily used as a hospital. With careful arrangements and the supply of necessary accessories, these barracks will make a very satisfactory substitute for a regular hospital, pending the construction of the new one that has been authorized. The medical officers' quarters in these Lines have also been condemned, and it is in contemplation to close the present sewage farm and open another at a greater distance from the camp. The re-construction of the barracks and their annexes has continued throughout the year, and the whole of the corps in the garrison are now housed in permanent brick buildings, with the exception of the men of the Medical Staff Corps in the North Camp, for whom, however, accommodation is to be found in the Tournay Barracks.

Some defects, from a sanitary point of view, in the newly constructed barracks have been pointed out by the medical officers in charge of corps. The coir mattresses in use have been unfavourably reported on, as they are more difficult to clean than the straw palliasses. The drainage of the Wellington Lines is now undergoing complete re-construction.

Much attention has been directed to the gymnastic and physical training of the troops, and has been attended by very beneficial results. The construction of the new hospital for women and children is urgently needed.

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#### *Channel Islands.*

The Senior Medical Officer, Brigade-Surgeon-Lieut.-Colonel J. F. Supple, reports that the barrack accommodation throughout the Islands generally is satisfactory, although the buildings are, in many cases, old fashioned. A very greatly felt want is a proper gymnasium, both for Jersey and the other stations in the Channel Islands. Such a building is much wanted to develop the physical training of the young soldiers. At Fort Regent concrete pavement has been laid down in front of the barrack-rooms. At Peter's Barracks the supply of water to men's urinals has been improved, and at Les Landes a well has been constructed with pump, for drinking and cooking purposes.

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*Scottish District.*

The Principal Medical Officer, Surgeon-Colonel W. Robinson, reports that the general sanitary arrangements throughout the district have been good, but strongly recommends the removal of one of the depôts at Hamilton to some other locality, as owing to the dampness and bad ventilation of the huts, the limited accommodation for the married families, and the gradual subsidence of the ground, causing fissuring of the drains, it does not appear desirable to carry out any more improvements there. The magazine at Edinburgh Castle has not yet been converted into a hospital, but this improvement will eventually be carried out. Three new blocks of married quarters have been completed during the year, one at Berwick-on-Tweed, one at Forthside, Stirling, and one at Inverness. The ablution arrangements are satisfactory, but hot water requires to be laid on in several of the bath-rooms, more especially at Ayr and Glasgow. The drainage at Hamilton, Inverness, Piershill, and Leith Fort has been reconstructed during the year. At the Musketry Camp at Barry Links the general health has been good. A nuisance existed at the railway station in the carting of town refuse therefrom, but on being brought to notice it was discontinued. At Fort George the water supply remains in the same condition, but the matter is under consideration still. At Maryhill, Glasgow, the latrine arrangements in the station hospital have been much improved, and a new recruiting depôt has been opened in Gallowgate Street, which is a great advantage from its central position.

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*Belfast District.*

The officiating Principal Medical Officer reports that the general health of the troops has been very good. At Belfast several sanitary improvements have been completed, and owing to the occurrence of two cases of enteric fever, the drainage system was thoroughly investigated. As a result the necessity was shown for its thorough reconstruction, which will shortly be carried out. At the station hospital it is very desirable that the accommodation should be increased to 100 beds, especially during the winter months, when there is much pressure for more space. At Dundalk the sanitary condition of the barracks is satisfactory, but some of the tenement houses in the vicinity of the barracks have been condemned by the Local Government Board. At Newry some very necessary improvements have been effected, viz., relaying the main sewer and reconstructing the latrine. The accommodation of the barracks on the regulation scale of 600 cubic ft. per man is inadequate for a whole regiment, so a company was detached at Drogheda, and in summer over-crowding is obviated by placing some of the men under canvas. Gymnasia are provided at Armagh, Belfast, and Newry with most beneficial results to the troops.

*Dublin District.*

The Principal Medical Officer, Surgeon-Major-General W. Collis, reports that the health of the troops compares favourably with the previous year. Several of the barracks in Dublin are situated in very poor quarters of the city, whose sanitary rules are, for the most part, ignored. The drainage at Linen Hall Barracks requires overhauling, but funds are not at present available. Some minor improvements have, however, been carried out. The drains at Island Bridge Barracks requires re-construction, as already reported, but as the troops cannot be removed while the Portobello Barracks are being rebuilt, no important improvement can be made. At Marlborough Barracks a small private ablution room was erected and fitted up with a view to affording facilities to men returning at night for washing, and thus lessening the occurrence of venereal diseases. At Portobello Barracks the drainage is now undergoing complete re-construction, and it is remarkable that only one case of enteric fever occurred during the year, although the barracks were in a notoriously bad state. At Beggars' Bush several improvements in the drainage

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and sanitation have been completed. The drainage at the Royal Infirmary, which was re-constructed in 1892, has been further improved, and is now adequate for all requirements. At Pigeon House Fort the drainage is indifferent, and alterations are made from time to time. At Galway the Castle and Shambles Barracks are in a cramped and confined position—they have been frequently reported on. At Mullingar the wall at one side of the hospital has been removed, and has resulted in a pleasant garden being made for the patients, and increased circulation of air for the building. Several complaints have arisen as to the want of a better supply of hot water to ablution and bath rooms. The water supply during the prolonged drought of the summer was intermittent, and had to be augmented by the water of the Royal and Grand canals.

*Cork District.*

The Principal Medical Officer, Surgeon-Colonel C. A. Maunsell, M.D., reports that a considerable amount of sanitary work has been carried out, and the health of the troops has shown a fair degree of improvement. At Ballincollig the drainage system in the barracks has been reconstructed, and the sewage farm field has been properly managed and cultivated. Hot plates have been fitted in the cookhouses, and a new barrack room provided for the Medical Staff Corps. The water supply has been altered, the old wells abandoned, and pipe water laid on from the new Ballincollig Waterworks. At Buttevant the old floors and ceilings have been repaired, with several minor improvements. At Cahir the "International system" of purification of sewage by treatment with ferrozene is to be introduced. At Clonmel it is satisfactory to note that since the introduction of the new drainage (9 in. and 5 in. pipes) no cases of enteric fever have occurred. A new water supply is about to be laid on. At Cork the erection of drying rooms for the men's clothing is advocated, and also the provision of hot water for the baths and ablution rooms. At Fermoy the filters at the waterworks have been renewed. At Kilkenny the condition of the barracks and its surroundings is not satisfactory, the arrangements for sewage and refuse disposal are imperfect. In the barracks a new water supply and new system of drainage are much required. At Kinsale minor improvements have been carried out, and a drying room for men's clothing almost completed. The canteen accommodation requires enlargement. The water supply is from wells, and requires careful filtration. At Limerick the drainage of the barracks is not in a satisfactory state, but the new system of water supply has been completed. At Fort Westmoreland considerable improvement has been made in the water supply, besides numerous minor alterations. At Fort Camden a new main drain has been laid. At Templemore the drainage is unsatisfactory. At Tipperary the barracks are good and of modern construction, but the water supply is not satisfactory. At Waterford numerous minor alterations have been made, but the sanitary state of the town is not satisfactory, the redeeming point being a good water supply.

*Curragh District.*

The Senior Medical Officer, Brigade Surgeon-Lieut.-Colonel J. Barry, M.D., reports the general sanitary condition as satisfactory. During the wet winter the want of drying rooms for the men's clothes was much felt. The accommodation for married families is unsatisfactory and the provision of proper quarters is much needed. At Newbridge the huts are old, but no disease can be attributed to defective sanitary conditions. The drainage of the Curragh is not yet completed, the present system of conservancy is chiefly dry-earth combined with a water system and a sewage farm. The water supply is reported as satisfactory.

### III.—ON THE HEALTH OF THE TROOPS SERVING IN THE MEDITERRANEAN.

#### *Sickness and Mortality.*

#### I.—GIBRALTAR.

The average strength of the warrant officers, non-commissioned officers, and men serving in the Command during the year was 4,743, and the force consisted of 4 Companies of the Eastern Division, Royal Artillery, 4 Companies Royal Engineers, the 1st Battalion Somersetshire Light Infantry, which left for India on the 19th December, the 1st Battalion Middlesex Regiment, the 1st Battalion Royal Highlanders, relieved in January by the 2nd Battalion East Lancashire Regiment, and the 2nd Battalion King's Royal Rifle Corps, also detachments Army Service Corps, Medical Staff Corps, Ordnance Store Corps, and Garrison Staff. *Gibraltar.*

In the subjoined table will be found the principal statistics of sickness and mortality among the troops in garrison :—

1893. Average Strength.	Admissions.	Deaths			Invalids		Average constantly Sick.	Ratio per 1,000 of Strength.				
		In the Command.	Of Invalids.	Total.	Sent Home.	Finally Discharged.		Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
4,743	3,780	11	2	13	70	40	259·87	796·0	2·74	14·76	8·43	54·79

Compared with the corresponding ratios in the preceding year, an increase has occurred in the admission rate equal to 115·4 per 1,000, and in the average number constantly sick of 8·60, but the death-rate has declined by 50 per 1,000.

Compared with average similar ratios for the previous ten years, an increase of 31·1 is observed in the case of admission, and of 8·47 in that of constant inefficiency through sickness, but there is a decrease of 2·57 in that of mortality.

The average sick time to each soldier was 20·00 days, being longer than the corresponding period in the previous year by 3·09 days, and longer by exactly the same amount than the average period in the preceding 10 years. The average duration of each case of sickness was 25·09 days, which is longer than in the previous year by 28 of a day, and 3·01 days above the average for the previous 10 years.

In Abstract XL. are given the principal statistics of individual Corps which served in the command during the year.

From this it will be seen that in the Artillery the highest admission and constantly sick rates were 973·7 and 69·74 per 1,000 in No. 5 Company, Eastern Division, while in the Infantry the highest admission rate was 1199·4 in the 2nd Battalion East Lancashire Regiment; but the 1st Battalion Middlesex Regiment had the highest rate of constantly sick, viz., 70·55 per 1,000 with an admission rate of 992·7, the 2nd Battalion King's Royal Rifles gave the lowest admission rate, viz., 667·7, and the 1st Battalion Royal Highlanders, which left the Command in January, the lowest constantly sick rate, 49·24, among Infantry regiments. With regard to mortality there were three

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deaths in the Artillery, equal to 3·02 per 1,000; 9 in the Infantry, equal to 2·82 per 1,000, and one in the Garrison Staff.

With reference to the influence of age on sickness and mortality, it is calculated that the admission rate among men under 20 years of age was 828·9 as compared with 740·7 in the previous year, among men between 20 and 25 years, 1052·7, as compared with 808·5; among men between 25 and 30, 512·7, as compared with 556·5, and among men over 30 years of age 271·4, as compared with 219·3. The ratio of mortality of men under 20 years of age was 79 per 1,000; of men between 20 and 25, 2·56, of men between 25 and 30, 1·81, and of men of 30 years and above 6·96 compared with 3·00, 3·42, '88, and 2·15 respectively in the preceding year.

As to the influence of service in the Command on sickness amongst the troops, it is found that the admission rate among men under one year's service was 1132·2 per 1,000, as compared with 909·3 per 1,000 in the previous year. Among men in their second year of service the rate was 581·4, as compared with 664·1. Among men in the third year of their service the rate was 627·5, as compared with 397·1, and among men over three years' service in the Command the rate was 521·8, as compared with 449·7 in the previous year.

The mortality rate among men in their first year of service in the Command was 2·61 per 1,000, among men in their second year 1·69, among men in their third year nil, and among men with over three years' service in the Command 3·96 per 1,000, compared with 2·18, 4·66, 4·84, and '84 respectively in the previous year.

The admissions, mortality, and invaliding according to the different groups and orders of diseases are shown in Abstract II.

**GENERAL DISEASES.—Diseases dependent on Morbid Poisons.—Eruptive fevers** caused 5 admissions, equal to a ratio of 1·1 per 1,000, which is slightly higher than the corresponding rate in the previous year.

*Enteric Fever* caused 17 admissions and 3 deaths, being in the ratios of 3·6 and '63 per 1,000 respectively, which are lower than the corresponding rates in the previous year by 1·5 and '18, and lower than the average ratios for the previous seven years by 7·7 and 1·21 respectively. The per-centage of mortality to attack was 17·6, that in previous year being 16·0, and the average for the preceding seven years 16·2.

The 1st Battalion of the Middlesex Regiment gave the largest number of attacks (8), but it is satisfactory to note that there has been a decrease in the total number of admissions as compared with 1892, and, with the exception of 1891, the admissions show a large decrease on previous years.

When a case occurs the system adopted to trace its origin is for the medical officer in charge of the barrack, in conjunction with an officer of the Royal Engineers, to inspect the room and drainage in the vicinity, but in no instance has any cause been discovered.

*Simple Continued Fever.*—132 admissions are recorded, equal to a ratio of 27·8 per 1,000, which is higher than the corresponding rate in the previous year by 12·0, and higher than the average rate for the past seven years by 1·2.

It will be noticed that a considerable increase has occurred as compared with last year, and slightly so over 1891. The medical officer in charge of the Station Hospital considers that many of the attacks are due to chill, and that the heading "Febricula" would represent their character more fittingly than simple continued fever, as known at this station. This chill cause is strengthened by the fact that the troops giving the largest number of cases were quartered at Buena Vista, Windmill Hill, and North Front Hutments. The two former are at considerable elevation, and much exposed, like the north front, to east winds blowing directly across the Mediterranean.

The men from these barracks returning hurriedly from the town at night get overheated, and expose themselves to the comparatively cold wind in order to get cool.

*Dysentery* caused 3 admissions. *Influenza.*—15 cases were admitted, all of a mild type. *Mumps.*—Four cases are recorded.

*Malarial Fevers* were represented by 3 cases of ague. *Septic Diseases* were represented by 4 cases of erysipelas.

**Venereal Diseases.**—The number of admissions for *primary syphilis* was 96, *Gibraltar*, being in the ratio of 20·2 per 1,000, which is below the corresponding rate in the previous year by 18·1, and below the average rate of the preceding seven years by 14·2. Including simple venereal ulcer, which caused 481 admissions, or 101·4 per 1,000, the admission ratio for primary venereal sores was 121·6 per 1,000, an increase of 21·7 over last year's rate, and an increase of 8·6 over the average rate. *Secondary syphilis* was the cause of 109 admissions, equal to 23·0 per 1,000, which is in excess of the rate for 1892 by 2·1, but below the average rate for the past seven years by 5·3. The admissions for *gonorrhœa* were 768 in number, equal to a ratio of 161·9 per 1,000, which is higher than the ratio for the previous year by 13·6 per 1,000, and higher than the average rate for the past seven years by 51·9. The total admission rate for all forms of venereal diseases was 306·5 per 1,000, which shows an increase of 37·4 over last year's rate, and an increase of 55·2 over the average rate for the past seven years. The total amount of constant inefficiency caused by these diseases was equal to 27·77 per 1,000, which is higher than the corresponding rate for the previous year by 5·95, and higher than the average rate for the previous seven years by 9·83 per 1,000. In the two deaths from secondary syphilis the primary disease was not contracted at this station.

**Parasitic Diseases.**—There were 7 admissions for *tænia solium*, as compared with 3 in the previous year.

**Alcoholism.**—18 cases were returned, being in the ratio of 3·8 per 1,000, as compared with 3·9 in the previous year.

**Debility.**—Under this head 10 cases are shown, the ratio being 2·1 per 1,000, as compared with 2·6 in the previous year.

**Rheumatism.**—The admissions numbered 138, among which were 6 cases of rheumatic fever. The admission rate was 29·1 per 1,000, which is higher by 5·6 than that in the previous year, but lower than the average rate for the past seven years by 1·8.

**Tubercular Diseases** gave 5 admissions, all for lung affections; the admission ratio was 1·1 per 1,000, which is exactly half that of the previous year, and lower by ·9 per 1,000 than the average rate for the past seven years. Other diseases of this group comprised non-malignant new growth 26 cases, scrofula 1, and *anæmia* 7. One death occurred from tubercle of lung, and the death of the invalid was also due to the same cause.

**LOCAL DISEASES.**—*Diseases of the Nervous System.*—59 admissions are returned, including one for mental disease. The admission rate, 12·4 per 1,000, is in excess of that in the previous year by 3·5, and of the average rate of the preceding seven years by 6·8. In addition to the case of mental affection the admissions included 41 cases of neuralgia, 9 vertigo, 4 epilepsy, 2 paralysis, 1 paraplegia, and 1 hysteria.

*Diseases of the Eye* caused 50 admissions, giving a ratio of 10·5 per 1,000, which differs only fractionally from the rate in the previous year and the average rate for the past seven years. Of the 50 admissions, 36 were for conjunctivitis.

*Diseases of other Organs of Special Senses.*—60 admissions are returned, all being for aural affections; 49 were inflammation of the external meatus, and occurred chiefly during the bathing season. The admission rate was 12·7 per 1,000, which is fractionally less than the rate in the previous year, but higher than the seven years average rate by 5·6.

*Diseases of the Circulatory System* gave an admission ratio of 6·7 per 1,000, which is higher than the rate in the previous year by 3·7 per 1,000, and above the average rate for seven years by 4·6. Of the 32 admissions under this head, 20 were for palpitation, and 7 for valvular disease of heart. Two deaths occurred from fatty degeneration of heart. The death of the invalid was due to pericarditis.

*Diseases of the Respiratory System.*—There were 156 admissions, equal to a ratio of 32·9 per 1,000, an increase of 5·7 on the previous year's rate, and in excess of the average rate for the past seven years by 6·5. The principal cause of admission was bronchitis, which caused 122 admissions, and among the remainder were pleurisy 14, and pneumonia 13.

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*Diseases of the Digestive System* caused 454 admissions and 1 death. The admission rate, 95·7 per 1,000, was in excess of the corresponding rate in the previous year by 23·6, and above the average rate by 18·5.

The principal causes of admission were sore throat 137 cases, dyspepsia 88, diarrhoea 60, colic 45, quinsy 31, hernia 23, gumboil 22, and jaundice 13. The death returned was due to cirrhosis of liver.

Hernia gives 9 cases more than last year. The following shows how this disability has increased during the last seven years, viz.:—3 in 1887, 3 in 1888, 3 in 1889, 6 in 1890, 7 in 1891, 14 in 1892, and 23 in 1893. As the cause could, in most cases, be traced to over-exertion when employed on public works, the matter was brought to the notice of his Excellency the General Officer Commanding.

*Diseases of the Lymphatic and Glandular System.*—77 admissions are returned, being in the ratio of 16·2 per 1,000, an increase of 4·2 on the last year's rate, and of 6·5 on the average rate.

*Diseases of the Urinary System* caused 18 admissions, 14 of which were for incontinence of urine, being at the rate of 3·8 per 1,000, which gives an increase of 1·2 per 1,000 over last year's rate, and an increase of 2·7 on the average rate.

*Diseases of the Generative System*, with an admission ratio of 120·2 per 1,000, was 43·0 in excess of the rate in the previous year, and above the average rate by 31·0 per 1,000. Of the 570 admissions, 481 were for simple venereal ulcer, and 53 for orchitis.

*Diseases of the Organs of Locomotion.*—27 admissions are returned, 17 of which were for synovitis. The admission rate, 5·7 per 1,000, is less than that in the previous year by 4·0, but fractionally above the average rate.

*Diseases of the Connective Tissue* caused 103 admissions, or 21·7 per 1,000, which is slightly below the rate in the previous year, but above the average rate by 4·2.

*Diseases of the Skin* were the cause of 304 admissions, equal to a ratio of 64·1 per 1,000, which is higher than the corresponding rate in the previous year by 6·4, and above the average rate by 22·8. Boils, itch, whitlow, and ulcers were the principal causes of admission.

*Injuries* caused 473 admissions and 2 deaths. The admission rate, 99·7 per 1,000, is in excess of the rate in the previous year by 6·5, but below the average rate by ·3. There was one admission for multiple injury, a gunner of the Royal Artillery having been crushed between a gun carriage and a wall, causing dislocation and fracture of the clavicle, also fracture of rib; 3 cases of accidental gunshot wounds, and 2 admissions for wounds self-inflicted. In one case a private, 1st Battalion Middlesex Regiment, cut his throat with a razor whilst under the influence of drink; no motive; he was invalided for alcoholism. The second case was also a private of the same regiment, who chopped off two fingers of his left hand to escape imprisonment.

The admissions for local injuries were chiefly wounds, sprains, and abrasions. The deaths were due to fracture of vault of skull, and contusion of abdomen with rupture of gall bladder respectively.

*Invaliding.*—The number of men invalided home during the year was 70, being in the ratio of 14·76 per 1,000, which is higher than the corresponding ratio in the previous year by 2·20, but lower than the average rate for the past 10 years by 7·73. With regard to invaliding in different corps, it is observed that among those whose average annual strength was over 100 men, the highest ratio was 53·33 per 1,000 in the Royal Engineers, the next highest being 21·95 in the 1st Battalion Middlesex Regiment; the lowest ratio was 9·06 in the 2nd Battalion East Lancashire Regiment, which arrived from England in January. Taking the ages of the men invalided, it is observed that the ratio of men under 20 years of age was 16·70 per 1,000, among men between 20 and 25, 15·36, among men between 25 and 30 years 13·61, and that among men over 30 years of age 9·28, compared with 9·01, 12·82, 15·02, and 12·90 respectively in the previous year. As to service in the Command, it is found that among men in their first year the invaliding rate was 16·20 per 1,000, among men in their second year 14·65, among men in their third year 6·71, and among men with over 3 years' service in the

Command 1453. In the preceding year the rates were 3·06, 13·99, 12·10, and 30·43 respectively. The principal causes of invaliding were aural affections 9 cases, diseases of the circulatory system 7, diseases of the digestive system 6, and tubercular diseases 6. *Gibraltar.*

The number of men finally discharged as medically unfit for further service was 40, being in the ratio of 8·43 per 1,000, which is lower than the corresponding rate in the previous year by 1·09, and than the decennial average rate by 17 per 1,000. The principal disabilities necessitating final discharge were nervous diseases (including 5 for mental affections) 8 cases, tubercular diseases and aural affections each 5 cases, circulatory diseases 4, and eye affections, digestive disorders, and diseases of locomotion 3 cases each.

*Officers.*—The average strength of officers was 161, and there were 68 attacks of illness and 2 deaths. The ratio of prevalence of sickness was therefore 422·3, and that of mortality 12·42 per 1,000, the former being an increase of 33·5 per 1,000, and the latter an increase of 6·87 per 1,000 over last year's rate; 13 cases of local injury were returned, and 9 of simple continued fever. One death was due to remittent fever and 1 to diabetes mellitus.

*Women.*—The average strength was 337, and there were 260 admissions and one death, being in the ratios of 771·5 and 2·97 per 1,000 respectively, the admission rate was higher by 238·8 per 1,000 than that of the preceding year, and the mortality rate lower by 3·26. The principal causes of admission were debility 33, simple continued fever 24, bronchitis 17, and sore throat 15. The death was due to enteric fever, and occurred in a woman landed sick from a troopship. The disease appears to have been contracted at Bristol.

*Children.*—The average strength was 594, and there were 503 admissions and 13 deaths. The admission rate, 846·8 per 1,000, was an increase of 106·5 on the rate in the preceding year, and the death rate, 21·89, shows a decrease of 14·95 per 1,000. The principal causes of admission were bronchitis 88 cases, diarrhoea 83, chicken-pox 42, and simple continued fever 23. The deaths were 3 from immaturity at birth, 4 from diarrhoea, 2 from bronchitis, and 1 from malformation of heart, debility, infantile convulsions, and psoriasis respectively.

*Sanitary Conditions.*—The Principal Medical Officer, Surgeon Major-General R. Lewer, reports that the great sanitary problems in Gibraltar are the prevention and mitigation of the overcrowding and density of population, the provision of a good and adequate supply of water, and an improved system of sewerage. The project of constructing a sewage outfall on the eastern beach, by tunnelling the rock, has been abandoned, and a new scheme with outfall at Europa Point is likely to be adopted. Byelaws have been introduced during the year for the control of the milk supply, and most of the old insanitary goat sheds have been abolished and sanitary buildings erected. Byelaws have been passed, though not yet acted upon, for the prevention of overcrowding in the civil tenements. Improvement has been effected in the quartering of the troops in the crowded town district. King's Bastion has been vacated and two new blocks completed and occupied in the Moorish Castle. The Town Range Barracks have been partially vacated by the removal of a battalion of infantry from Gibraltar. At the North Front a shelter hut has been erected on the ranges, and various minor improvements carried out. At Grand Casemate Barracks new latrines have been completed, drains relaid, and ventilation improved. At Moorish Castle two new barracks have been completed. The Town Range Barracks are badly situated, and proper ventilation is difficult, but some improvement has been made, admitting more light and air, by knocking down some useless walls and heavy masonry staircases. At South Barracks the removal of alternate cross walls in the barrack rooms has been effected. At Rosia Barracks a new fresh-water tank has been provided. At Buena Vista improved grates have been fitted, and a rain-water tank erected. At Windmill Hill quarters for two warrant officers and a new cook-house have been built, and some minor improvements completed.

As regards hospital accommodation the only change has been the opening of a non-dieted hospital at the Town Range Barracks with 132 beds. The



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disinfection of clothing and bedding is carried out by the Colonial authorities under a fixed scale of charges. The surface drainage of the quadrangle has been improved, but no work of any importance has been carried out during the year.

As regards rations, a proposal has been made to supply beef from Vigo for six months in the year instead of four, as formerly, the increased cost to be met by reducing the ration from 16 to 15 oz. This will be a great improvement. A refrigerator for the storage of frozen meat is still under consideration. The gymnastic training has had a very beneficial effect on the physical development of the young soldiers.

## II.—MALTA.

*Malta.*

The average strength of the troops serving in Malta during the year was (with the exception of the Royal Malta Artillery) 7,161. The garrison was composed as follows:—Five companies of the Southern Division, Royal Artillery, and three of the Royal Engineers, the 2nd Battalion East Surrey Regiment (from 4th March), 1st Battalion North Staffordshire Regiment (from 8th May), and 1st Battalion Gloucestershire Regiment (from 11th November), the 1st Battalion Royal West Surrey Regiment, the 2nd Battalion South Lancashire Regiment (until 9th February), the 1st Battalion Welsh Regiment (until 13th November), the 1st Battalion Royal Berkshire Regiment (to 4th March), the 1st Battalion Cameron Highlanders, the 2nd Battalion Royal Irish Rifles, detachments of the 2nd Battalion Connaught Rangers, Army Service Corps, Medical Staff Corps, Ordnance Store Corps, and Garrison Staff.

The principal statistics of sickness and mortality are shown in the subjoined table:—

1893. Average Strength.	Admissions.	Deaths			Invalids		Average constantly Sick.	Ratio per 1,000 of Strength.				
		In the Command.	Of Invalids.	Total.	Sent Home.	Finally Discharged.		Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
7,161	5,433	61	14	75	195	103	346·91	758·7	10·47	27·23	14·38	46·86

Compared with the corresponding ratios in the previous year, the admission ratio has increased by 34·1, the death-rate by 1·80, and the constantly sick rate by 1·48. As compared with previous decennium, there is an increase of 86·0, 2·28, and 4·73 respectively in these rates. The average sick time to each soldier was 17·83 days, an increase of ·49 of a day over previous year, and of 1·72 days on the decennial average period. The average duration of each case of sickness was 23·51 days, a decrease below previous year of ·42 of a day, and below the average of the preceding ten years by about the same. The statistics of sickness and mortality in the different arms of the service and in individual corps are shown in Abstract XL.

In the Artillery the admission rate was 512·0, the death rate 7·76, and the constantly sick rate 36·29 per 1,000, the corresponding ratios for 1892 being 574·7, 8·05, and 42·58 respectively. Among the different companies the highest admission ratio was 667·9, in the No. 29 Company, stationed at Fort Tigne for the greater part of the year and then at Ricasoli; the next rate was 590·9, in No. 6 Company, which occupied the same stations in reverse order;

the highest ratios of constant inefficiency were also in the above-mentioned *Malta* companies, 51·62 and 42·56 respectively. The lowest admission rate was 453·9, in No. 2 Company, at Fort Tigne for the first half year, and then at Upper St. Elmo, and St. James' Cavalier, the lowest rate of constantly sick being in No. 27 Company at Fort Ricasoli. The highest death rate was in No. 29 Company, 14·76 per 1,000; the lowest ratio, 3·29, occurring in No. 2 Company. In the Engineers the admission rate was 281·4, the death rate 3·39, and the constantly sick rate 19·12 per 1,000, all of which are considerably lower than those for the previous year. In the Infantry the admission rate, 866·5 per 1,000, shows an increase of 96·9 on that for 1892, the death rate 11·80, one of 3·08, and the constantly sick rate, 54·88, one of 5·62. Among battalions of infantry the 1st Battalion Gloucestershire Regiment, stationed at Pembroke Camp on arrival from England in November, gave the highest admission ratio, 1593·2 per 1,000, followed by 1412·9 in the 2nd Battalion East Surrey Regiment, which arrived from England in April, and was also at Pembroke Camp until November, and then at Isola Gate; the lowest annual ratio was 422·9 per 1,000 in the detachment, 2nd Battalion Connaught Rangers, at Gozo. The ratio of mortality was highest, 52·02 per 1,000, in the 1st Battalion Royal Berkshire Regiment, at Lower St. Elmo until embarkation for Bermuda in April, followed by 25·42 in the 1st Battalion Gloucestershire Regiment; both these regiments suffered from enteric fever. The 1st Battalion Welsh Regiment, which left for England in November, gave the lowest death rate, 4·34 per 1,000, having been quartered at Floriana and Notre Dame, the next above being 4·77 in the 1st Battalion Royal West Surrey Regiment, at Verdala for the greater part of the year. Constant inefficiency through sickness was highest in the 1st Battalion Royal Berkshire Regiment, the rate being 79·19 per 1,000, the next was 75·02, in the 1st Battalion North Staffordshire Regiment, which arrived from Mauritius in May and was quartered at Isola Gate and Verdala, the detachment, 2nd Battalion Connaught Rangers, gave the lowest rate, 27·93 per 1,000.

With regard to the effect of age on sickness and mortality, it is calculated that the admission rate of men under 20 years of age was 955·0 per 1,000, as compared with 661·6 for the previous year; between 20 and 25 it was 957·7 as compared with 852·0, from 25 to 30 it was 425·0 as compared with 579·7, and for those over 30 years of age 349·0, as compared with 509·2, the previous year's rate. Mortality under 20 years gave a ratio of 6·56 compared with 5·42 for 1892, from 20 to 25 years it was 10·58, an increase of 2·41 on the previous year's rate, and from 25 to 30 and 30 years and over, the ratios were 6·71 and 5·88 respectively, the former being lower and the latter higher than the corresponding ratios of 1892.

As to length of service in the Command, it is found that the admission rate of men in their first year of service was 901·4 per 1,000, that among men in their second year 694·5, that among men in their third year 535·0, that among men in their fourth year 1031·7, and that among men over four years' service in the Command 399·3. Comparing these ratios with the corresponding results in the previous year, an increase of 268·0 and 47·3 respectively is noticed in the two first-named periods, but a decrease has occurred in the ratios of the remaining periods. Mortality among men in their first year of service in the Command was at the rate of 9·71 per 1,000, and in the following periods 7·94, 9·25, 10·78, and 3·60 consecutively. Compared with the rates of the previous year increase is observed in the first three periods, but decrease in the last two.

In Abstract No. III. will be found a table showing the principal statistics of sickness and mortality according to the several groups and orders of diseases.

**GENERAL DISEASES.—Diseases dependent on Morbid Poisons.**—There was one mild case of *measles*, which represents all the admissions for *eruptive fevers*. *Enteric fever* caused 101 admissions and 32 deaths, or a ratio of 14·1 and 4·47 per 1,000 respectively. The admission and death rates show an increase on the previous year of 4·7 and 1·28 respectively, and also of 8·3 and 2·37 in comparison with the average rates for the previous seven years. The percentage of mortality to attack was 31·68, as compared with 33·78 in 1892, and

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36·09, the average for seven years. Interesting information concerning the men attacked will be found below :—

COMPARATIVE STATEMENT FOR THREE YEARS.

	Ratio per 1,000 of Strength.		
	1891.	1892.	1893.
Admissions - - - - -	6·2	9·4	14·1
Deaths - - - - -	2·46	3·19	4·47
Average Constantly Sick - - - - -	1·10	1·01	2·66

	Under 20 Years.	Under 21 Years.	Under 22 Years.	Under 23 Years.	Under 24 Years.	24 and over.	Total.
Admissions 1893, showing respective ages -	18	15	15	11	10	32	101

	Under 1 Year.	Under 2 Years.	Under 3 Years.	Under 4 Years.	Under 5 Years.	5 and over.	Total.
Admissions 1893, showing service -	8	24	18	16	7	28	101

	Under 1 Year.	Under 2 Years.	Over 2 Years.	Total.
Admissions 1893, showing service in Malta - - -	33	24	24	101

An outbreak of enteric fever took place at Pembroke Camp chiefly among the men of the 1st Battalion Gloucestershire Regiment recently arrived from England. The first case was admitted on 28th November. The outbreak had not abated at the close of the year.

A commission was appointed by the Government to investigate the outbreak, and their report, after pointing out certain sanitary defects and the introduction of milk into the camp by irregular vendors, attributed it to contaminated water either from tanks or through the milk supply.

Extracts from the report run as follows :—

“ Nos. 11 and 12 tanks supply the men's ablution rooms and are themselves supplied with aqueduct water in the summer, and with rain-water in the winter. The catch area is unprotected and open to infective pollution by men, children, and animals. The tanks have no filter beds, and though no definite contamination was found in the water by chemical analysis yet it contained a large amount of albumenoid ammonia on January 17th, and is labelled unfit for drinking purposes.

“ In many cases the ablution rooms and cook-houses are side by side, and, as no cook-house has aqueduct water laid on, there is a great temptation to

the men to use this water in preference to the aqueduct supply. The aqueduct taps are few in number and placed at a distance from the cook-houses . . .

"The committee would point out that Pembroke Fort and "C" Block, married quarters (where there are no polluted tanks), have so far escaped.

"Moreover, the outbreak occurred 15 days after heavy rains of November 13th and 14th first filled the tanks, at a time when polluting matter most readily gains access to such tanks. The same has been the case in former years.

"As the incubation period of enteric fever is from 10 to 21 days, the state of this auxiliary water supply appears to be a question of vital importance."

Strong representations were made regarding supervision of the milk supply, and preventing the use of tank water for drinking purposes, with good results. Since their arrival the men of the 1st Battalion Gloucestershire Regiment have been largely employed levelling the camp, laying out gardens, and rebuilding the musketry butts, in addition to which the ground had been disturbed for purposes of field works. This work was stopped as far as practicable on representation of the circumstances being made to the General Officer Commanding.

*Simple Continued Fever.*—There were 938 admissions for this disease and 5 deaths, the average constantly sick being 70·21. The ratios per 1,000 for admissions and deaths were 131·0 and ·70, as compared with 174·5 and 1·78 in 1892. The average constantly sick rate was 9·80, as compared with 13·46 in the previous year. The seven years' average rates both for admissions and constantly sick are below those for 1892. As is the rule generally, the admissions for this disease are mostly confined to young soldiers in the ranks of the battalions joining the Command during the year.

*Dysentery.*—The admissions were 29, compared with 15 in 1892, the ratio being 4·1, compared with 1·9. Deaths 2, compared with *nil* in 1892. The cases were mild, with the exception of the fatal cases.

The other diseases in this sub-group included 6 of influenza and 1 of mumps.

*Malarial Fevers.*—There were 171 admissions for ague, 121 for remittent fever, and 2 for malarial cachexia. The introduction of these fevers into this Command to such an extent (there were only 8 cases of ague in 1892) was due to the arrival of the 1st Battalion North Staffordshire Regiment from Mauritius, and a large draft of the 1st Battalion Gloucestershire Regiment from India. The majority of the cases were mild in character. There were no deaths from these diseases.

*Septic Diseases.*—These included 9 cases of erysipelas with one death, and 2 cases of pyæmia with one death.

*Venereal Diseases.*—*Primary syphilis* caused 117 admissions, giving a ratio of 16·3, which is a fractional decrease on the rate of the previous year. The constantly sick rate equalled 2·09, an increase of ·51 on the previous year's rate. Including simple venereal ulcer the total admission ratio was 51·5, an increase of 7·8, compared with 1892, and of 8·4, compared with the average of the previous seven years. The constantly sick rate, 4·55, showed slight increase in these two comparisons. *Secondary syphilis* caused 95 admissions, or a ratio of 13·3. Compared with 1892 and the seven years' average, there is a decrease of 5·3 and 1·3 respectively. For *Gonorrhæa* there were 664 admissions, the ratio, 92·7, showing an increase in the last-named comparisons of 9·1 and 32·6. Including all forms of venereal disease, the rates of admission and constantly sick, 157·5 and 13·02, both showed an increase on the previous year's rate and also on the average rate for seven years.

*Parasitic Diseases* caused 9 admissions as compared with 8 in the previous year.

*Alcoholism.*—Under this head are included 22 cases of alcoholism and 2 of delirium tremens.

*Debility.*—Compared with previous year, the admission rate under this heading shows a decrease of 1·2. The cases were mostly the result of protracted fevers.

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*Rheumatism.*—Compared with 1892, the decrease in the admission rate is only fractional, but compared with the seven years' average rate amounts to 2·1. There was one death from rheumatic fever against *nil* during the previous year.

*Tubercular Diseases* caused 21 admissions and 12 deaths, including 8 of invalids who died after leaving the Command. The admission and death rates equalled 2·9 and 1·67, and were above those of the previous year and the seven years' average. The deaths were due to tubercle of lung.

The climate is favourable to persons suffering from diseases under this heading, and the increase is no doubt due to the diseases having been contracted before arrival in this Command.

*Other diseases* of this group numbered 24, and included 21 of non-malignant new growth, 1 of malignant new growth, 1 of purpura, and 1 of anæmia. There were two deaths, both invalids, from malignant new growth.

*LOCAL DISEASES.—Diseases of the Nervous System.*—There were 55 admissions and 2 deaths, being in the ratios of 7·7 and ·28 per 1,000. Compared with last year's rate and the average for seven years there is a decrease in the admission rates of 3·0 and 1·0, and an increase of ·15 and ·01 respectively in the death rate. There were 9 cases of mental disease.

*Diseases of the Eye* caused 70 admissions, the ratio per 1,000 being practically the same as last year.

*Diseases of other Organs of Special Senses* gave an admission rate of 11·7 per 1,000 fractionally below the rate of the previous year, but 1·0 higher than that of the seven years' average. Of the 84 admissions 69 were for inflammation of external meatus.

*Diseases of the Circulatory System.*—There was a decrease of ·5 in the ratio of admissions, but a slight increase in the constantly sick rate. Of the 40 cases 21 were for valvular disease of the heart and 16 for palpitation. The two deaths were due to inflammation of the heart and valvular disease of the heart.

*Diseases of the Respiratory System.*—Decrease of 60 in admissions, of 2 in deaths, and of 2·92 in the average constantly sick. In ratio the decrease in admissions was 5·7, in deaths ·20, and the increase of average constantly sick ·23. Of the 162 total admissions, 126 were for bronchial affections and 16 for pneumonia. There were 4 deaths, including 3 of invalids, who died after leaving the Command. The death in the Command was due to pleurisy, while of the 3 others, 2 were from pneumonic phthisis, and one from pneumonia.

*Diseases of the Digestive System.*—Diseases under this head show an increase in the ratio of admissions of 4·1 and a decrease of ·61 in deaths. The constantly sick ratio is much about the same. The chief causes of admission were sore throat 98, quinsy 49, follicular tonsillitis 45, dyspepsia 50, diarrhœa 132, and colic 49, out of a total of 591. The causes of the two deaths were 1 abscess of liver and 1 peritonitis.

*Diseases of the Lymphatic and Glandular System* gave an admission rate of 7·5, almost identical with that of last year, but above the average of seven years.

*Diseases of the Urinary System.*—There were 19 admissions with only a fractional increase in the ratio per 1,000.

*Diseases of the Generative System* show a decided increase in the number of admissions, the ratio being 51·0, which is 7·2 above that of last year and 9·8 above the seven years' rate. The chief cause of admission is found in simple venereal ulcers, which gave 252 cases out of a total of 365, against 212 in the previous year.

*Diseases of the Organs of Locomotion* present statistics very similar to 1892. Of a total of 41 admissions, 25 were for synovitis. The ratio of admission, 5·7, differed only fractionally in the one and seven years' comparisons. There was one death of an invalid which was due to chronic abscess.

*Diseases of the Connective Tissue.*—Increase of 60 admissions and in ratio of 10·9. The relative ratio of average constantly sick is 1·15 in 1893 to 1·10 in 1892. The total of admissions, 262, is made up as follows: Oedema 1, inflammation connective tissue 117, and abscess connective tissue 144.

*Skin Diseases.*—The sick rate under this heading, 51·8, is higher by 8·7 than *Malta*. in 1892, and by 12·9 than the seven years' average. The principal causes of the 371 admissions were eczema 76, ulcer 42, and boil 112.

*Poisons.*—Under this head there were 4 cases of poisoned wound and 1 of oxalic acid poisoning, 5 cases in all. No death occurred.

*Injuries.*—These caused 721 admissions and 8 deaths, being in the ratios of 100·7 and 1·12 per 1,000, an increase in both cases of 9·3 and ·61 as compared with 1892, and of 14·3 and ·34 as compared with the average rates for seven years. The admissions, as usual, were due principally to simple contusions, sprains, and wounds. The deaths were due in 6 cases to asphyxia from submersion, and in 1 case each to asphyxia by plugging of air passages, and gunshot wound of the head, suicidal, in the latter case a verdict of *felo de se* was returned.

*Invaliding.*—There were 195 men invalided to England, being in the ratio of 27·23 per 1,000, as compared with 23·06 in the previous year, and 20·99 the rate for the previous 10 years. Excluding corps with small average strength, the highest rates of invaliding were in the 1st Battalion North Staffordshire Regiment, 55·47, and the 6th Company, Southern Division, Royal Artillery, 53·72; the lowest rates were in the 2nd Battalion East Surrey Regiment, 7·41, and the 12th Company, Southern Division, Royal Artillery, 7·97. With regard to the ages of the men invalided, 22, or 20·62 per 1,000, were under 20 years of age; 110, or 31·45 per 1,000, were from 20 to 25 years; 47, or 22·52, per 1,000 were from 25 to 30 years, and 16, or 31·37 per 1,000, were 30 years and over. Compared with 1892 there is a decrease in the first and last mentioned periods of age, and an increase in the second and third periods. As regards length of service in the Command, in men under 1 year the ratio was 29·14, in their second year, 31·29, in their third year, 19·81, in their fourth year, 21·57, and in men of 4 years' service and over, 21·58. The result as compared with last year is a decrease in the rate from 2 to 3 years, and an increase in the remaining periods. The principal causes of invaliding were other continued fevers, with a ratio of 9·22, tubercular diseases, 1·95, mental diseases, 1·95, and diseases of the circulatory system, 1·95.

The number of men finally discharged the service was 103, a ratio per 1,000 of 14·38, being slightly above last year's rate. The disabilities causing final discharge were, principally, debility, 2·37, mental diseases, 1·81, tubercular diseases, 1·53, other continued fevers, 1·25, and diseases of digestive system, 1·12 per 1,000.

*Officers.*—The average strength was 186, and there were 147 admissions, 3 deaths, and 8 were invalided. The ratio per 1,000 of admissions was 790·3, and of deaths, 16·13. Simple continued fever shows cause for 72 admissions and 2 deaths. The other death was caused by mercurial poisoning, accidental. Invaliding was due to simple continued fever 2 cases, enteric fever 2 cases, dysentery 1, debility 1, inflammation prostate gland 1, and eczema 1 case. This shows a decrease of 4·8 in the ratio of admissions, an increase of 11·25 per 1,000 in the death rate, and a considerable decrease in the number of invalids, compared with the preceding year.

*Women.*—Statistics of women compare favourably with 1892, excepting that one death occurred (from valve disease of heart) against no death in the previous year. The average strength was 300, and of the total of 186 admissions simple continued fever caused 51, debility 34, bronchitis 14, and dyspepsia 15. The ratio of admissions was 620·0, against 786·8, and of deaths, 3·33 to nil in 1892.

*Children.*—The average strength was 513, and there were 407 attacks of illness, giving a ratio of 793·4, which is lower than that of the previous year by 285·0 per 1,000. There were 33 deaths, the ratio, 64·33, being lower than last year by 16·06. The chief causes of admission were measles 93, simple continued fever 40, bronchitis 58, and conjunctivitis 17. The large number of admissions for measles was due to an epidemic in Valletta district, which was no doubt due to contraction from the civil population, among whom the disease was prevalent before the outbreak. An outbreak of purulent conjunctivitis occurred among children at Gozo, to which place the disease was almost confined. It was no doubt also due to infection from the civil population.

The deaths were due to measles, 8, inflammation of intestines and diarrhoea 5 each, diphtheria and simple continued fever 4 each, immaturity at birth 2,

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and scrofula, inflammation, cerebral membranes, infantile convulsions, bronchitis, and pneumonia, one each.

**Sanitary Conditions.**—The Principal Medical Officer, Surgeon-Major-General J. Inkson, M.D., reports that the health of the troops might have been described as good had it not been for the epidemic of enteric fever. This disease and Mediterranean fever were the main causes of serious illness, though much of the inefficiency was due to venereal disease. It is a question, considering the length of the summer and the prolonged heat, whether it would not be well to treat the troops as regards khaki clothing and other sanitary matters as if it were a tropical station. The water supply, viz., the number of places in which tank water can be obtained out of barracks, and its use in making lemonade, &c., doubtless acts as a cause of disease, and the abolition of the tank system in its entirety is much to be desired. Orders have been issued regimentally explaining to the men the risk they run by drinking impure water, but the prevention of their being able to obtain it would be more efficacious. The want of fire-places and drying rooms for clothing is still much felt, and the supply would have a beneficial effect on the health of the troops. The overcrowding in some of the barracks still exists, and must continue to do so until the new buildings at Imtarfa are fit for occupation. During the summer months half the troops sleep under canvas. The rations have been generally of good quality. Several complaints about the quality of the bread have been attended with good results.

Valletta Hospital still requires much improvement, and the need of floors impervious to damp and moisture is much felt. Cottonera Hospital answers admirably the requirements of the district. The need of proper hospital accommodation for women and children is a pressing want. At Pembroke Camp the drainage system has been ventilated and improved, and aqueduct water laid on to the new barracks. At Tigne hutments four huts have been moved from the vicinity of the latrines, and the drains taken up and replaced. At Lower St. Elmo the surface drainage has been improved, and drinking water laid on. At Vittoriosa the sewer from houses at the back of the Admiralty has been connected with the new system of drainage. At Gozo the drainage has been improved, and a large water tank erected, and in the station hospital the floor has been raised and ventilated.

Extra coal was granted in order that all water used for drinking and cooking purposes might be boiled previous to filtration.

### ROYAL MALTA ARTILLERY.

The average strength of this corps was 372 non-commissioned officers and men, and the accompanying table shows the chief statistics of their sickness and mortality :—

1893. Average Strength.	Admissions.	Deaths			Invalids		Average constantly Sick.	Ratio per 1,000 of Strength.				
		In the Command.	Of Invalids.	Total.	Sent Home.	Finally Discharged.		Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
372	196	1	—	1	—	6	7·09	526·9	2·09	—	16·13	19·06

Compared with the return for the preceding year the admission ratio shows a decrease of 4·1, and the constantly sick rate one of 3·04 per 1,000, but there was an increase of 2·69 in the death-rate, and in comparison with similar

average rates for the previous ten years, a decline of 119·8 and 5·28 respectively has taken place in the admission and constantly sick ratios, but the mortality rate has increased by ·19. *Malta.*

The average sick time to each soldier was 6·95 days, and the average duration of each case of sickness 13·20 days, which are shorter than the corresponding periods in the previous year by 1·14 days and 2·03 days, and than the similar decennial average periods by 1·94 days and ·54 of a day.

**GENERAL DISEASES.**—*Diseases dependent on Morbid Poisons.*—*Eruptive fevers* were represented by 3 cases of cow-pox. There were 21 cases of *simple continued fever*, giving an admission ratio of 56·4. There were no cases of *enteric fever*, but the *other diseases* of this sub-group were represented by 2 cases of mumps. There were no cases of *malarial fever* or of *septic disease*. *Venereal diseases* numbered 22, being in the ratio of 59·1, and included 7 of *primary syphilis*, 2 of *secondary syphilis*, and 13 of *gonorrhœa*. *Debility* caused 2 admissions, *rheumatism* 9, and *tubercular diseases* 3. None call for special comment.

**LOCAL DISEASES.**—With the exception of respiratory, digestive, and skin diseases, none of these require particular notice.

*Diseases of the Respiratory System* caused 22 admissions and 1 death, being in the ratios of 59·1 and 2·69 per 1,000, a decrease of 11·0 in the admission rate compared with the previous year. Of the total admissions, 19 were due to bronchitis.

*Diseases of the Digestive System* were the cause of 19 admissions, 7 being for sore throat and 4 for dyspepsia.

*Diseases of the Skin* caused 30 admissions with a ratio of 80·6, above the previous year's rate by 15·9 per 1,000. The presence of skin disease in the Royal Malta Artillery is thought to be due to the food the men indulge in, viz., salted fish, and also to the action of the sun on the skin, and to the profuse perspiration while at work during the summer months. The principal diseases were boils, ulcers, and impetigo.

*Injuries* gave rise to 46 admissions, none of a serious nature.

*Invaliding.*—There were 6 men invalided, giving a ratio of 16·13 per 1,000, and below last year's rate. The causes of invaliding were debility 2 cases, and hypochondriasis, tubercle of lung, perforation of membrana tympani, and hernia one case each.

*Officers.*—The strength was 20, and there were 23 admissions, the principal being for simple continued fever, bronchitis, and boils. There were no deaths.

*Women.*—Out of a strength of 41 there were only 3 admissions. One death occurred from tubercle of lung.

*Children.*—The strength was 126, and there were 35 admissions, 8 being for measles, 8 for simple continued fever, and 7 for bronchitis. There were 5 deaths, 2 from measles, and one each from spina bifida, debility, and bronchitis. The sickness was much less compared with 1892.

*Sanitary Conditions.*—The Medical Officer in charge, Surgeon-Major L. Manché, M.D., reports that the sanitary condition and cleanliness of the barracks have been carefully attended to during the year.



## Cyprus.

## III.—CYPRUS.

The average strength of warrant officers, non-commissioned officers and men serving in Cyprus during the year was 550, and the force comprised the headquarters and four companies of the 2nd Battalion Connaught Rangers, some men of Departmental Corps, and Garrison Staff.

The principal statistics of sickness and mortality among the troops are shown in the subjoined table:—

1893. Average Strength.	Admissions.	Deaths			Invalids		Average con- stantly Sick.	Ratio per 1,000 of Strength.				
		In the Command.	Of Invalids.	Total.	Sent Home.	Finally Discharged.		Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
550	373	1	—	1	27	16	25·25	678·2	1·82	49·09	29·09	45·80

Comparing this table with a similar one for the preceding year a decrease of 37·4 per 1,000 is observed in the admission rate, one of 5·71 in the death rate, but an increase of 6·37 has occurred in that of constantly sick; and compared with average similar ratios for the previous ten years a decline is also observed, being as much as 122·4 per 1,000 in admission rate, 6·46 in the mortality rate, but an increase of 4·34 is shown in the rate of constant inefficiency through sickness. The average sick time to each soldier was 16·75 days, and the average duration of each case of sickness 24·70 days, which are longer than the corresponding periods in the previous year by 2·29 days and 4·48 days, and than the similar average periods for the preceding ten years by 1·58 days and 5·75 days respectively.

The stations occupied by the troops during the year were Polymedia, Limassol, Nicosia, and Troödos. The two former were occupied twice during the year from January to June, and again from October to December. During the interval all the troops were stationed at Mount Troödos. Nicosia was occupied by one company of the 2nd Battalion Connaught Rangers from January to June, and again in December.

In Abstract XL. is a table showing the sickness and mortality of the troops in the Command by corps. It will be seen that the infantry shows a greater ratio of sickness than the Garrison Staff and Departments. As regards the sickness and mortality according to age, it is found that in soldiers under 20 years of age the ratio per 1,000 admitted equals 3363·6, a very great increase on the previous year's rate. From 20 to 25 the ratio was 762, which is a decrease of 338·6 on last year's rate; from 25 to 30 years the ratio equalled 385·4, an increase of 34·7; from 30 and upwards, the ratio, 818·2, shows an increase of 562·4. There was only 1 death, and that occurred in the last-named period. Taking length of service in the Command, the highest rate of sickness occurred in men between 2 and 3 years' service, viz., 2182·9, nearly four times as great as in 1892. The next highest was in men under 1 year's service. The death occurred in a man with over three years' service.

The admissions, deaths, invaliding, &c., according to the different groups and orders of diseases will be found in Abstract IV.

**GENERAL DISEASES.**—*Diseases dependent on Morbid Poisons.*—*Scarlet fever* caused one, and *simple continued fever* 32 admissions. This shows a considerable decrease in the number (55) of cases of simple continued fever in the previous year. Nevertheless this fever is among the chief causes of inefficiency from sickness.

*Malarial Fevers* caused 6 admissions.

*Veneral Diseases.*—*Primary Syphilis* caused 13 admissions, or a ratio of 23·6, considerably above last year's rate. Including simple venereal ulcer the admission ratio for primary venereal sores was 43·6, lower than last year's rate by 1·5 per 1,000, and less than the seven years' average rate by 81·1. *Secondary syphilis* caused 9 admissions, or a ratio of 16·4, below the rate for 1892 by 8·1, and that for the previous seven years by 25·2. *Gonorrhœa* caused 69 admissions with a rate of 125·5, lower than last year's rate by 12·0, but

above the 7 years' average by 26·9. Including all forms of venereal disease, the admission ratio amounted to 185·5 per 1,000, and the constantly sick ratio to 16·96. The former rate in comparison with the previous year and the previous seven years' average shows a decline of 21·6 and 79·4 respectively. The latter rate in the same comparisons shows an increase of 3·36, and a decline of 2·90 respectively.

*Alcoholism.*—There were 2 admissions under this heading.

*Debility* caused 16 admissions, or a ratio of 29·1 per 1,000, less than half the rate of the previous year.

*Rheumatism* accounted for 20 admissions, the ratio showing an increase of 27·0 compared with last year's figures.

*Tubercular Diseases* were responsible for 2 admissions, and the *other diseases* of this group are represented by 2 cases of non-malignant new growth.

**LOCAL DISEASES.**—*Diseases of the Nervous System* gave only 3 admissions, not calling for any special remark.

*Diseases of the Digestive system* caused 46 admissions, with a ratio of 83·7 per 1,000, an increase on last year's rate of 29·1, and on the rate of the previous 7 years of 2·1.

*Diseases of the Generative System* were responsible for 22 admissions, and a ratio of 40·0 per 1,000, which shows a decrease of 3·3 compared with the rate for 1892 and of 16·0 compared with the 7 years' rate.

None of the other diseases in Class II. call for special remark. The one death was due to pneumonia.

*Injuries* caused 52 admissions, the ratio per 1,000 equalling 94·5, which is an increase of 41·8 on last year's rate, and of 16·6 on the average rate for the previous seven years. The principal causes of admission were wounds, contusions, and sprains.

*Invaliding.*—The number of men invalided home during the year was 27, being in the ratio of 49·09, which is below the corresponding rate for the previous year by 1·75, but above the decennial average rate by 33·18 per 1,000. With regard to the age of the invalids 16, or 55·17 per 1,000, were between 20 and 25 years of age; 10, or 48·78 per 1,000, were between 25 and 30, and 1 was over that limit. As to service in the Command, 16, or 82·47 per 1,000, had between 1 and 2 years' service; 4, or 48·78, between 2 and 3 years, and 7, or 27·78, over 3 years' service. The causes of invaliding were due to simple continued fevers, 2 cases, secondary syphilis 1, debility 10, rheumatism 2, tubercular diseases 2, diseases of nervous system 3, of the eye 2, of the circulatory system 4, and of the urinary system 1.

The number of men finally discharged as medically unfit for further service was 16, equal to a ratio of 29·09 per 1,000, which is higher than the previous year by 21·56, and than the average for the previous decennial period by 22·92.

The disabilities necessitating discharge were diseases of the circulatory system 8, tubercular disease 3, and one each simple continued fever, debility, rheumatism, mental disease and diseases of digestive system.

*Officers.*—The average strength was 22, and the number of admissions 8. None of the latter call for remark.

*Women.*—The average strength was 29, and the number of admissions 26. The greater number of these were for simple continued fever and debility. The ratio per 1,000 for admissions was 896·5, an increase on last year's rate of 432·2. There were no deaths.

*Children.*—The average strength was 66, and the admissions 35. Two deaths occurred, one from simple continued fever and one from debility. The ratio per 1,000 for admissions was 530·3, and of deaths 39·30. Compared with last year's rates there is a decrease of 11·4 in the former, and an increase of 9·47 in the latter.

*Sanitary Conditions.*—The Senior Medical Officer, Brigade Surgeon Lieut-Col. W. E. Riordan, reports that there are no insanitary local conditions particularly calling for remark. Venereal affections are the chief cause of inefficiency. At Mount Troódos three barracks have been built, each block accommodating 25 men. They are constructed of stone and afford excellent accommodation. There has been no overcrowding during the year, and the ventilation and sanitation of all buildings is satisfactory. A new plunge bath has been made at Polymedia, which is much appreciated. The hospital accommodation is good and sufficient with no overcrowding.

#### IV.—ON THE HEALTH OF THE TROOPS SERVING IN THE DOMINION OF CANADA.

##### *Sickness and Mortality.*

Canada.

The average strength of the garrison was 1,421. The troops consisted of the head-quarters No. 3 Company, Western Division, Royal Artillery; the 18th and 40th Companies Royal Engineers, detachments Army Service Corps, Medical Staff Corps, and Ordnance Store Corps, and Garrison Staff throughout the year; also the 1st Battalion Leicestershire Regiment until 25th March, when it left for the West Indies on relief by the 1st Battalion Liverpool Regiment from Bermuda. All the troops were stationed at Halifax, the only station in Canada occupied.

The principal statistics of sickness and mortality are given in the following table:—

1893. Average Strength.	Admissions.	Deaths			Invalids		Average constantly Sick.	Ratio per 1,000 of Strength.				
		In the Command.	Of Invalids.	Total.	Sent Home.	Finally Discharged.		Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
1,421	721	1	2	3	19	17	32.12	507.4	2.11	13.37	11.96	22.60

Compared with corresponding results in the previous year an increase of 54.1 per 1,000 is observed in the ratio of admission, one of .67 in that of mortality, and one of 4.28 in the constantly sick rate; but compared with similar average ratios for the preceding ten years a decrease is observed in all, 64.6 in the case of admission, 2.80 in that of mortality, and 9.13 in that of constant inefficiency through sickness.

The average sick time to each soldier was 8.25 days, and the average duration of each case of sickness 16.26 days, which are longer than the corresponding periods in the previous year by 1.54 days and 1.46 days, but shorter than the similar decennial average periods by 3.33 and 3.98 days respectively.

In Abstract XL. will be found the more important health statistics of the different arms of the service and of individual corps.

The highest admission rate was 602.8 per 1,000 in the 1st Battalion Leicestershire Regiment, and the lowest, 393.3, in the 18th Company Royal Engineers. The highest ratio of constantly sick was 27.18, in the 1st Battalion Leicestershire Regiment, and the lowest, 14.04, in the 18th Company Royal Engineers.

With regard to the influence of age and length of service in the Command, it is calculated that among men under 20 years of age the admission rate was 500.0 per 1,000; and among men from 20 to 25, it was 697.0. Amongst those from 25 to 30, 364.2, and amongst those above that age, 244.0. In the preceding year the highest rate was amongst those under 20. Compared with the corresponding rates in the previous year an increase is observed in that of men from 20 to 25, and a decrease in all others. The admission rate of men under one year in the Command was 526.4; that of men in their second year, 787.5; in the third year it was 419.4; and in those over that service, 231.6. The highest rate was among men in their second year of service, but in 1892 the highest rate was in men under 1 year's service in the Command.

The sickness, mortality, and invaliding, according to the different groups and orders of diseases, are shown in Abstract V.

**GENERAL DISEASES.—Diseases dependent on Morbid Poisons.**—The total admissions in the 1st sub-group were 26, of which 6 were for scarlet fever, all of mild type; 18 for influenza, being an increase of 10 on the number for the preceding year; and 1 one for diphtheria. There were no cases of enteric fever, and only one of simple continued fever. The admission rate for

the sub-group was 18·3, which is an increase of 9·0 on that for the preceding year, and of 5·0 on the average of seven years. *Considered*

**Malarial Fevers.**—There were only 3 admissions, all of which were for ague of mild type.

**Septic Diseases.**—In this sub-group there were no admissions.

**Venereal Diseases.**—In this sub-group 39 admissions, equal to a ratio of 27·5 per 1,000, are shown for *primary syphilis*, which is 10·3 above that for the preceding year, and ·9 above the average of the previous 7 years. Including the sickness from simple venereal ulcer, of which there were 17 cases recorded, the ratio of admissions for primary venereal sores was 39·4, being an increase on that for the year preceding of 16·4, and on the average of seven years of 5·9.

**Secondary Syphilis** caused 17 admissions, being in the ratio of 12·0, which is ·5 higher than that for 1892, but 11·2 below the average. The admissions for *gonorrhœa* were 65, and the ratio, 45·7, is 1·2 above that for the previous year, but 17·0 below the average.

Including all forms of venereal disease, the total admission rate was 97·1, which, as compared with last year's rate, shows an increase of 18·1, and compared with the average a decrease of 22·3. The total amount of constant inefficiency caused by these diseases was equal to 5·12 per 1,000 strength, being above that for 1892 by ·86, but below the average by 2·50.

**Alcoholism** caused 7 admissions, as compared with 5 in the preceding year, and there were also two cases of delirium tremens.

**Rheumatism** was the cause of 28 admissions, equal to a ratio of 19·7, which is below the rate for the previous year by ·4, and lower than the average by 11·0. There were 3 cases of rheumatic fever as compared with 1 in 1892.

For **Tubercular Diseases** there were 5 admissions, as compared with 1 in the year preceding. The ratio, 3·5, shows an increase of 2·8 on that for 1892, and is 1·7 higher than the average. One invalid died from tubercle of lung after leaving the Command. The remaining admissions for diseases in Group D. were 7 for non-malignant new growth.

**LOCAL DISEASES.**—**Diseases of the Nervous System.**—Nineteen admissions were returned, equal to a rate of 13·4, which is 6·2 above that for the preceding year, and 3·7 above the average. In Sub-section I. there was one admission for inflammation of the membranes of the brain; in Sub-section II., 17, including 6 for neuralgia, 4 for vertigo, and 6 for epilepsy; and in Sub-section III., one, a case of toxic insanity from alcohol. The death of the invalid was due to epilepsy.

**Diseases of the Eye.**—In this order 11 admissions are recorded, as compared with 4 in the year preceding. The ratio, 7·7, is 4·8 higher than that for 1892, but 1·1 below the average. None of the cases call for remark.

**Diseases of other Organs of Special Senses** caused 8 admissions, all of which were for affections of the ear.

**Diseases of the Circulatory System.**—Seven admissions are returned, including one for pericarditis, and 3 for valve disease of heart. The ratio, 4·9, is below that for the preceding year by ·1, and lower than the average of 7 years by 5·8.

**Diseases of the Respiratory System** caused 58 cases, giving an admission rate of 40·8 per 1,000, which is higher than that for the preceding year by 9·2, and 3·8 above the average. Of the admissions, 41 were for bronchitis, 7 for pleurisy, 5 for pneumonia, 3 for laryngitis, and 2 for hæmoptysis. One of the cases of pneumonia terminated fatally. The patient was a young soldier of the Leicestershire Regiment, naturally delicate, who succumbed to an attack of 11 days' duration.

**Diseases of the Digestive System** were the cause of 113 admissions. The ratio, 79·5 per 1,000, is below that of the preceding year by 11·7, but above the average rate by 8·7. The most prevalent disorders were follicular tonsillitis, 53 cases, and dyspepsia, 20 cases. Five cases of typhlitis are returned, all of which recovered. Diarrhœa gave only 8 admissions.

**Diseases of the Lymphatic and Glandular System.**—Thirteen admissions are returned, equal to a ratio of 9·2, which is 10·9 below the corresponding rate for 1892, and 5·1 lower than the average.

**Diseases of the Urinary System.**—Only one admission is recorded in this order. The case was one of hæmaturia.

*Canada.*

*Diseases of the Generative System.*—40 admissions are returned, comprising 3 for stricture of the urethra, 9 for balanitis, 17 for simple venereal ulcer, 1 for varicocele, and 10 for orchitis. The ratio, 28·2, is 3·0 higher than that of the preceding year, and 2·7 above the average.

*Diseases of the Organs of Locomotion* show 16 admissions, and a ratio of 12·7, which is higher by 2·6 than that in the preceding year, and 4·4 above the average. Of the admissions 12 were for synovitis, as compared with 10 in 1892.

*Diseases of the Connective Tissue* gave 35 admissions, equal to a ratio of 24·6. This is an increase of 11·7 on that of the preceding year, and of 5·4 on the average. The increase is due to the numerous cases of abscess.

*Diseases of the Skin.*—43 admissions are shown, including 11 for ulcer, 7 for boil, and 6 for itch. The ratio per 1,000, 30·3, is 3·5 lower than in 1892, and 5·1 below the average.

*Poisons.*—There were no admissions.

*Injuries.*—The admissions for injuries numbered 150, which is an increase of 33 on the preceding year. The ratio, 105·6, is above that for 1892 by 21·5, and the average by 35·5. The cases included 46 for sprain, 42 for wound, 35 for contusion, and 7 for fracture.

*Invaliding.*—The number of men invalided to England during the year was 19, giving a ratio of 13·37 per 1,000, which is 6·19 above that for the year preceding, but lower than the ten years' rate by 7·08. The rate of invaliding was 5·97 in the Artillery, 6·41 in the Engineers, and 18·18 in the Infantry. With regard to age it is observed that none were under 20; 13, or 20·41 per 1,000, were from 20 to 25; 4, or 7·55 per 1,000, were from 25 to 30; and 2, or 11·91 per 1,000, were above that age. The ratio in men under one year in the Command was 12·92; that of men in their second year of service nil; in their third year 38·71, and in men above that 5·65. The causes of invaliding were for tubercle of lung 4, for epilepsy 3, wounds 2, and debility, inflammation of membranes of brain, toxic insanity from alcohol, myopia, pericarditis, valve disease of heart, bronchitis, hæmoptysis, otitis and fracture, each one.

The number of men finally discharged as medically unfit for further service was 17. The invaliding ratio, 11·96 per 1,000, is above the rate in 1892 by 6·21, but below the decennial average rate by 3·72. The disabilities necessitating discharge were diseases of the nervous system 4 cases, tubercular disease and diseases of circulation 3 cases each, diseases of respiration, locomotion, and local injuries 2 cases respectively, and Bright's disease one case.

*Officers.*—The average strength was 62, and there were 17 attacks of illness. The ratio of admissions was 274·2, which is lower than the corresponding rate for 1892 by 109·1.

*Women.*—The average strength was 130, and there were 12 cases of sickness recorded. The ratio was, therefore, 92·3 per 1,000, which is an increase on that for the preceding year of 36·8. Two deaths occurred, viz., one from peritonitis and one from nephritis.

*Children.*—In an average strength of 262 there were 61 cases of sickness, giving a ratio of 232·8, which is higher than that for 1892 by 21·4. The increase is chiefly due to an epidemic of mumps of which 24 cases are recorded. There were 4 cases of chicken-pox, 1 of measles, and 2 of scarlet fever. Two deaths occurred, one from infantile convulsions and one from diarrhoea. The death rate, 7·63, is 5·58 below that for the year preceding.

*Sanitary Conditions.*—The Principal Medical Officer, Surgeon-Colonel S. Archer, reports that the health of the troops has been excellent. There has been no overcrowding. There have been fewer complaints as to warming, owing to greater attention having been paid to the expenditure of fuel. The drainage is generally satisfactory, and the drains at the officers' quarters, Wellington Barracks, have been remodelled, the soil pipes ventilated, and all modern improvements made. At the Station Hospital there is ample accommodation. A new pattern latrine has been substituted for the old pan system, and a requisition put forward for laying hot water on to the bath rooms. At the South Barracks the rooms have been improved, giving more light and air, and Deane's ovens fitted in the cook-house. At Wellington Barracks, also new ovens have been fitted. The gymnasium has been well attended, and the results have proved very satisfactory.

## V.—ON THE HEALTH OF THE TROOPS SERVING IN BERMUDA.

### *Sickness and Mortality.*

The average strength of warrant officers, non-commissioned officers and men *Bermuda.* was 1,390. The force comprised No. 1 Company, Western Division, Royal Artillery, the 27th and 36th Companies, Royal Engineers, the 1st Battalion the King's Liverpool Regiment, relieved in March by the 1st Battalion Royal Berkshire Regiment, detachments Army Service Corps, Medical Staff Corps, Ordnance Store Corps, and Garrison Staff.

In the following table are the principal statistics of sickness and mortality among the troops during the year:—

1893. Average Strength.	Admissions.	Deaths			Invalids		Average constantly Sick.	Ratio per 1,000 of Strength.				
		In the Command.	Of Invalids.	Total.	Sent Home.	Finally Discharged.		Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
1,390	642	12	—	12	6	8	35.79	461.9	8.63	4.32	5.75	25.76

Compared with corresponding ratios in the preceding year, a decrease of 42.9 per 1,000 is observed in the admission rate, one of .17 in the death rate, but an increase occurred of .26 in that of constantly sick; and compared with average similar ratios for the previous ten years, the decrease in admission rate was 123.1, in the mortality rate 1.47, and in the constantly sick rate 4.92.

The average sick time for each soldier was 9.39 days, for the previous year 9.33 days, and for the previous decennial period, 11.19 days.

The average duration of each case of sickness was 20.35 days, in the previous year it was 18.49 days, and the average of the previous ten years 19.13 days.

In Abstract XL. is given a table showing the sickness and mortality in the different Corps which served in the Garrison during the year.

The Royal Artillery gave 496.3 admissions per 1,000, and 24.56 constantly sick, the 27th Company Royal Engineers, 507.0 and 30.14, the 36th Company Royal Engineers, 212.8 and 12.02, the King's (Liverpool Regiment) 370.9 and 21.50, and the 1st Battalion Royal Berkshire Regiment, 515.7 and 29.90 per 1,000.

The highest death rate was in the Royal Engineers, 18.18 per 1,000, dependent on 3 deaths, the next in the Infantry, 7.92, in which there were 7 deaths, and the next in the Royal Artillery, 7.30, dependent on 2 deaths.

As to the age of the men it is found that the admission ratio among men under 20 years was 563.6 per 1,000, between 20 and 25 years 514.7 per 1,000, between 25 and 30 years 437.7, and among men over 30 years of age 258.7 per 1,000; the corresponding ratios for the previous year being 736.8, 574.8, 333.3, and 360.3 per 1,000 respectively.

Of the deaths 7, or 10.32 per 1,000, occurred among men between 20 and 25 years of age, and 5, or 9.73 per 1,000, among men between 25 and 30 years of age.

With regard to the influence of length of service in the Command it is calculated that the admission rate among men in their first year of service was

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516·3 per 1,000, among men in their second year 327·0, in their third year 450·6, and over 3 years' service in the Command 384·2 per 1,000; the corresponding ratios for the previous year being 851·7, 447·3, 393·1, and 292·9 respectively.

As to the mortality, 8 deaths, or 9·67 per 1,000, occurred in men under 1 year's service in the country, 1, or 4·74 per 1,000, among men in their second year, 1, or 6·17 per 1,000, among men in their third year, and 2, or 10·53 per 1,000, among men over 3 years in the country.

The principal statistics of sickness and mortality according to the different groups and orders of diseases are shown in Abstract VI.

**GENERAL DISEASES.**—*Diseases dependent on Morbid Poisons.*—There were no admissions for *eruptive fevers*, but *enteric fever* caused 43 admissions to hospital, and 9 deaths, of these 27 were at Prospect with 2 deaths, 12 at St. George's with 5 deaths, and 4 at Watford with 2 deaths, being in the ratios of 30·9 and 6·47 per 1,000. Compared with the corresponding ratios for the preceding year, namely, 16·1 and 4·40 per 1,000, this shows an increase of 14·8 in the admissions, and one of 2·07 in the deaths. The corresponding average ratios for the preceding seven years were 35·9 for admissions, and 5·93 per 1,000 for deaths.

The per-centage of mortality to attack was 20·9, as compared with 27·3 for previous year. Concerning the cases at St. George's, there was a tendency to connect them with the insanitary state of the town at that place, but afterwards it was found that the defective drainage system of the barracks was entirely responsible for the disease; this is now being rectified. There were cess-pits found close to quarters, and in some instances almost under buildings, the contents of these came from waterclosets. Some of the sewers were formed of loose porous stone, not even cemented, and several other defects were found to exist in the drainage here, but it is hoped now that the place will be put in a sanitary condition. Of the 27 cases treated at Prospect, only 19 could be traced to the camp there, and were due either to the latrines being used by a mild case of enteric fever or to the drains, which are not at all in a wholesome state. These are supposed to be for urine, ablution, and surface water, only, and empty themselves into the sea about a mile from the barracks. The ventilating shafts of these drains give forth a most offensive odour, and one case of fever has been directly connected with these foul emanations getting into the women's wash-house through the drainage pipe of the sink in the building, owing to the drain not being properly ventilated from outside. The whole of the Prospect drains require complete overhauling, and it is believed that if they are placed in a satisfactory state, and the dry-earth system carried out with attention from the different corps, that fever will cease altogether at Prospect. Formerly cess-pits only were used by the inhabitants of Hamilton and St. George's, but now many are erecting waterclosets in connexion with these pits, and ultimately the whole foundation of the buildings, and even the walls of the houses, will absorb a large amount of this diluted night-soil, owing to the soft porous nature of the stone used, and will in course of time become a most serious cause of disease.

*Simple Continued Fever* caused 26 admissions, giving a ratio of 18·7 per 1,000, as compared with 11·0 per 1,000 for previous year; of these 12 occurred at Prospect, 12 at St. George's, and 2 at Watford.

*Dysentery.*—There was one admission for dysentery; it was a very mild case.

*Veneral Diseases.*—There were 17 admissions for *primary syphilis*, being 12·2 per 1,000, as against 6·6 for previous year. Including simple venereal ulcer, the admission ratio for primary venereal sores was 14·4, being an increase in 1892 of 6·3, but a decrease of 6·6 compared with previous 7 years average.

*Secondary Syphilis* gave 10 cases, or 7·2 per 1,000, as against 8·8 for previous year. *Gonorrhoea* gave 31 admissions, or 22·3 per 1,000, being an increase of 8·4 over the previous year. Including all forms of venereal diseases, the total admission ratio was 43·9 per 1,000, as against 30·8 for the previous year, thus showing an increase of 13·1, but compared with average rate of the preceding 7 years a decrease of 16·8 per 1,000. The total amount of constant inefficiency on account of these diseases was 3·12 per 1,000, as against 3·47 for the previous year, and 4·72, the average of the preceding seven years.

*Parasitic Diseases* caused 8 admissions, and there were 5 admissions for *Berula*, *alcoholism*, but none for delirium tremens.

*Debility* gave 3 admissions, or 2·2 per 1,000, as against 8·0 for previous year.

*Rheumatism* gave 24 admissions, or 17·3 per 1,000, against 23·5 for previous year. There was one case of rheumatic fever.

*Tubercular Diseases* gave one admission, viz., for tubercle of lung, which proved fatal.

*Diseases of the Nervous System* gave 7 cases, 2 being for mental disease (melancholia). The diseases of this system gave a ratio of 5·0 per 1,000, against 7·3 for previous year; 5 of these cases were for neuralgia.

*Diseases of the Eye* gave 14 cases, or 10·1 per 1,000, against 8·8 for previous year.

*Diseases of the Ear* gave 15 cases, or 10·8 per 1,000, against 10·3 for previous year.

*Diseases of the Circulatory System* gave 19 admissions, 3 being for valvular disease of heart, 6 for palpitation, 5 for varicose veins, 2 for phlebitis, 2 for phlegmasia dolens, and one for aneurism of abdominal aorta, which proved fatal. The admission rate, 13·7, was higher than that for the previous year by 4·2, and than that for the preceding seven years by 4·0 per 1,000.

*Diseases of the Respiratory System* gave 40 admissions, or 28·8 per 1,000, against 19·8 for the previous year; there were 35 cases of bronchitis, 1 chronic pneumonic phthisis, 1 hæmoptysis, 1 pleurisy, and 2 laryngitis catarrhal; there was no fatal case under this system.

*Diseases of the Digestive System* gave 126 admissions and one death, the ratio of admission being 90·6 per 1,000, as compared with 99·8 for previous year; the chief affections were 35 cases of dyspepsia, 19 of diarrhoea, 14 of jaundice, 13 of colic, and 11 of sore throat. The fatal case was from abscess in the sub-peritoneal tissue, caused by a fall on a tent peg.

*Diseases of the Lymphatic and Glandular System* gave 6 admissions, or 4·3 per 1,000, against 5·9 for previous year.

*Diseases of the Urinary System* gave 2 admissions for Bright's disease; they were light cases, and returned to duty.

*Diseases of the Generative System* gave 16 admissions, or 11·5 per 1,000, against 11·7 for previous year.

*Diseases of the Organs of Locomotion* gave 8 admissions, or 5·8 per 1,000, against 18·3 for previous year.

*Diseases of the Connective Tissue* gave 25 cases, or 18·0 per 1,000, against 19·1 for previous year.

*Diseases of the Skin* gave 45 admissions, or 32·4 per 1,000, against 47·9 for previous year.

*Injuries* gave 142 admissions, or 102·2 per 1,000, against 136·4 for previous year. They were chiefly due to contusions, wounds, and sprains. There were no deaths.

*Invaliding*.—There were 6 invalids sent home, giving a ratio of 4·32 per 1,000, which is below the previous year's rate by 6·68, and the previous decennial rate by 10·87 per 1,000. In the Royal Engineers the invaliding ratio was 6·06, in the infantry 4·52 per 1,000, and garrison staff and departments 14·93.

With regard to age, 5, or 7·37 per 1,000, were from 20 to 25 years of age, and 1, or 1·95 per 1,000, between 25 and 30 years. As to service, 1, or 4·74 per 1,000, was in his second year of service in the Command, and 5, or 30·86 per 1,000, in their third year of service. The rates for both age and service compare favourably with the previous year's ratios, with the exception of the last named, which is very much higher. The causes of invaliding were secondary syphilis 2, rheumatism 1, deafness 1, melancholia 1, and valve disease of heart 1.

The number of men discharged as medically unfit for further service was 8, equal to a ratio of 5·75 per 1,000, which is above the previous year's rate by 1·35, but below the decennial rate by 3·78. The disabilities necessitating discharge were diseases of eye and ear 3 cases, mental diseases 2 cases, and secondary syphilis, diseases of circulatory system, and organs of locomotion one case respectively.

*Officers*.—The average strength was 58; admissions 15; ratio of admissions 258·6 per 1,000, as against 357·1 for previous year. There was one case of enteric fever, but no death occurred.



*Bermuda.*

*Women.*—The average strength was 80; admissions, 45; the rate of admission being 562·5 per 1,000, against 382·0 for previous year. Debility, rheumatism, anæmia, and simple continued fever were the main causes of sickness. There were 2 cases of enteric fever, but no death during the year.

*Children.*—The average strength was 142; admissions, 69; rate of admissions, 485·9 per 1,000, against 240·5 for previous year. There were 2 cases of simple continued fever, 3 of enteric fever, 17 of respiratory diseases, and 22 cases of digestive diseases among the admissions. The deaths were immaturity at birth, infantile convulsions, teething, and scalding one case respectively.

*Sanitary Conditions.*—The Senior Medical Officer, Brigade-Surgeon Lieut.-Colonel H. Comerford, M.D., reports that the drainage at St. George's, which was in a defective state, is being completely overhauled. Several minor improvements have been carried out at Prospect Camp, viz., surface drainage and ventilation of latrines improved, water tanks cleaned out and one permanently closed, ablution rooms enlarged and provided with racks and seats. At Warwick Camp also the drainage and latrine system has been improved.

## VI.—ON THE HEALTH OF THE TROOPS SERVING IN THE WEST INDIES.

### *Sickness and Mortality.*

#### I.—WHITE TROOPS.

The average strength serving in the West Indies during the year was 1,261 warrant officers, non-commissioned officers and men. In the Barbados Command the average strength was 761, and in the Jamaica Command 500. The force in the Barbados Command was as follows:—No. 18 Company, Western Division Royal Artillery, at Barbados and St. Lucia, the headquarters of the 2nd Battalion, Duke of Wellington's West Riding Regiment at Barbados, with one company at St. Lucia until 10th April, when they were relieved by the 1st Battalion Leicestershire Regiment from Halifax; and details of Royal Engineers, Departmental Corps, and Garrison Staff, quartered at Barbados and St. Lucia. *West Indies.*

In the Jamaica Command the force comprised, the 10th Company, Western Division, Royal Artillery, three companies of the Duke of Wellington's West Riding Regiment, until April, being succeeded by three companies of the 1st Battalion Leicestershire Regiment, and detachments of Royal Engineers, Army Service Corps, Medical Staff Corps, Ordnance Store Corps, and the Garrison Staff.

The more important statistics of sickness and mortality among the troops in each division of the Command, as well as of those in the West Indies, taken as a whole, are shown in the subjoined table:—

1893.	Average Strength	Admissions.	Deaths			Invalids	
			In the Command.	Of Invalids.	Total.	Sent Home.	Finally Discharged.
Barbados Command - -	761	971	1	—	1	22	16
Jamaica Command - -	500	339	7	—	7	6	5
West Indies - - -	1,261	1,310	8	—	8	29	21

(continued.)

1893.	Average constantly Sick.	Ratio per 1,000 of Strength.				
		Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
Barbados Command - -	65·51	1275·9	1·31	29·91	21·02	86·08
Jamaica Command - -	19·13	678·0	14·00	12·00	10·00	38·26
West Indies - - -	84·64	1038·8	6·34	22·20	16·65	67·12

*West Indies.*

As regards the Barbados Command, on comparing the statistics with those of the previous year, it is seen that the ratio of admission is decreased by 58·8 per 1,000, the death rate by 4·27, and the constantly sick rate by 4·64. The average sick time to each soldier, 31·42 days, is shorter by 1·78 days, and the average duration of each case of sickness, 24·62 days, is shorter by ·26 of a day.

In the Jamaica Command the admission rate is higher by 60·2 per 1,000 than in 1892, but the ratios of mortality and constant inefficiency are both lower by 2·53 and 4·32 respectively. The average sick time to each soldier, 13·96 days, is shorter by 1·62 days, and the average duration of each case of sickness, 20·60 days, by 4·63 days, than in the previous year.

Taking all the troops in the West Indies together, the ratio of admission decreased by 7·0 per 1,000 as compared with the previous year, the death rate by 3·66, and the constantly sick rate by 4·20. In comparison with the corresponding average ratios for the previous ten years, a decrease of 37·1 and 3·75 is observed in the admission and death rates respectively, but an increase of 9·57 occurs in the rate of constantly sick. The average sick time to each soldier was 24·50 days, shorter than the corresponding period for the previous year by 1·60, but longer than the average period for the preceding ten years by 3·49 days. The average duration of each case of sickness, 23·58 days, compares favourably with 24·96 in 1892, but is longer than the decennial average period by 4·06 days.

In Abstract XL. will be found a table showing the most important of the statistics of sickness and mortality of the different corps which served in the West Indies during the year.

In the Barbados Command, No. 18 Company, Western Division, Royal Artillery, at Barbados and St. Lucia gave an admission rate of 1500·0 per 1,000, and a constantly sick rate of 88·96. There was one death, giving a ratio of 9·43. The 1st Battalion Leicestershire Regiment at Barbados and St. Lucia gave an admission ratio of 1298·6 per 1,000, and a constantly sick rate of 84·20.

At Jamaica the 10th Company, Western Division, Royal Artillery, gave an admission rate of 1018·3 per 1,000, a death rate of 27·52, and a constantly sick rate of 53·58. The three companies of the 1st Battalion Leicestershire Regiment at Newcastle gave an admission rate of 595·7, a death rate of 8·51, and a constantly sick rate of 29·11 per 1,000.

The statistics of sickness and mortality according to the age of the men show that the admission rate in men under 20 years of age was 1315·8, as contrasted with 1060·6 in the previous year. In men between 20 and 25 the rate was 1265·1, as against 1234·9 last year. In men from 25 to 30 the rate was 878·0, compared with 909·1 in 1892. In those over 30 years of age the rate was 575·5, considerably below last year's rate. There was no mortality among men under 20 years of age, but 6 deaths, or 9·82 per 1,000, occurred in men from 20 to 25, as against 5·81 in the previous year. In men between 25 and 30 and over 30 years of age there was 1 death each, giving ratios of 2·03 and 7·19 per 1,000 respectively, both rates being much below those of last year.

With regard to length of service in the Command, the admission ratio amongst men in their first year of service was 997·5, a decrease of 531·7, as compared with the previous year's rate. In those in their second year it was 1422·5, nearly double that of last year. In the third year it was 466·6, about a fifth less than in 1892, and in those over 3 years' service in the Command it was 837·5 per 1,000, as against 240·0 in the previous year, a very marked increase. Of the deaths 5, or 6·31 per 1,000, occurred amongst those in their first year's service in the Command. This rate compares favourably with 10·58 in 1892. Two deaths occurred in those in their second year of service, a ratio of 7·04, against 4·35 in 1892. Among men in their third year of service in the Command there were no deaths, but in those with over 3 years' service there was 1 death with a ratio of 12·50 per 1,000.

In Abstract VII. will be found the most important of the statistics of sickness and mortality arranged according to the different groups and orders of diseases.

**GENERAL DISEASES.—Diseases dependent on Morbid Poisons.**—Under *West Indies*, the head of *eruptive fevers* there were no admissions.

*Enteric Fever* caused 10 admissions and 5 deaths, equal to ratios of 7·9 and 3·97 per 1,000, higher than the corresponding ratios for the previous year by 3·7 and 1·47 respectively. Compared with the average rate for the previous seven years the admission rate is lower by 3·3, but the death rate is higher by 1·64. The per-centage of mortality to attack was 50·0, as against 60·0 in 1892, and 20·9, the average for the previous seven years. Eight of the cases and 4 deaths occurred in Jamaica, and 2 cases with 1 death in the Barbados Command.

*Other Continued Fevers* caused 61 admissions, or a rate of 48·4 per 1,000, an increase on last year's rate of 9·3, but below the average of the previous seven years by 51·5 per 1,000.

*Dysentery* caused 5 admissions, 4 at Jamaica and one at Barbados. The ratio of admission equalled 4·0 per 1,000, as compared with 2·5 in the previous year.

*Other Diseases* of this sub-group are represented by 69 cases of influenza.

*Malarial Fevers* caused 38 admissions and 1 death, 13 and the death being at Jamaica, and 25 in the Barbados Command. The ratio per 1,000 of admission was 30·1, a decrease of 21·5 as compared with the rate of the previous year, and one of 15·4 as compared with the septennial average rate.

*Venereal Diseases.*—The admissions for *primary syphilis* were 38 in number, equal to a ratio of 30·1, being lower than last year's rate by 14·0. Including simple venereal ulcer, the admission rate was 96·7, and the constantly sick rate 8·75, as compared with 125·7 and 9·76, the rates for the previous year, and 134·4 and 10·35, the seven years' average rates. In the Barbados Command the admission and constantly sick rates for primary venereal sores were 122·2 and 9·04 per 1,000 respectively, a marked decrease on the rates of the previous year. In Jamaica these rates were 58·0 and 5·56 respectively, as compared with 72·3 and 5·60 last year. The admissions for *secondary syphilis* were 60 in number, and there were 6·45 men constantly sick. The admission rate, 47·6, and the constantly sick rate, 5·11, were both lower than in 1892 by 7 and 1·01 respectively, but as compared with the septennial average rate were both higher by 12·1 and 1·38 per 1,000 respectively. In the Barbados Command the admission rate was 59·1 and the constantly sick rate 6·77, as compared with 58·6 and 7·46 in 1892. In Jamaica the ratios were 30·0 and 2·60, as compared with 33·1 and 4·13 in previous year. *Gonorrhœa* gave rise to 219 admissions, and an average of 19·12 men constantly sick, being in the ratios of 173·7 and 15·16 respectively, as against 165·7 and 13·94, the previous year's rates, and 149·1 and 10·55, the rates of the seven years' average. In the Barbados Command the admission and constantly sick rates were 220·8 and 20·74, against 237·1 and 19·85 in 1892. In Jamaica similar rates equalled 102·0 and 6·68 per 1,000, compared with 59·9 and 5·18, the rates for the previous year. Including all forms of venereal disease, the total admission rate was 318·0, and the total constantly sick rate 29·02 per 1,000, as compared with 339·7 and 29·82 in the previous year, and 319·0 and 24·63, the septennial average rates. In the Barbados Command the total admission and constantly sick ratios were 402·1 and 36·55, as against 457·5 and 39·87 in 1892, and in Jamaica the corresponding ratios were 190·0 and 14·84, as compared with 165·3 and 14·91 for the previous year.

*Alcoholism* caused 13 admissions, and *debility* 20.

*Rheumatism.*—There were 52 admissions for this disease, of which 2 were for rheumatic fever, but no death occurred. The ratio per 1,000 equalled 41·2, a decrease of 4·6, as compared with the rate for the previous year. There were 2 cases of *tubercular disease*, both for lung affection. *Other diseases* of this group caused 16 admissions, or a ratio of 12·7 per 1,000, and included 10 cases of non-malignant new growth, 4 of anæmia, and 2 of scrofula.

**LOCAL DISEASES.**—*Diseases of the Nervous System* caused 20 admissions, including 2 of mental disease, giving a ratio of 15·8 per 1,000, slightly lower than last year's rate.

*West Indies.*

*Diseases of the Eye* gave 11 admissions, or a ratio of 8·7, lower by 3·8 per 1,000 than the rate for 1892.

*Diseases of other Organs of Special Senses* caused an admission rate of 33·3, higher by 12·5 per 1,000 than last year's rate.

*Diseases of the Circulatory System* caused 9 admissions and 1 death (which was due to valvular disease of heart), being in the ratios of 7·1 and ·79 per 1,000, as compared with 8·3 and 1·67 in 1892.

*Diseases of the Respiratory System* gave rise to 21 admissions, or an admission rate of 16·7, lower by 14·1 than in 1892.

*Diseases of the Digestive System* caused 115 admissions, giving a ratio per 1,000 of 91·2, an increase of 7·9 on the rate of the previous year, but lower than the seven years' average rate by 19·2 per 1,000.

*Diseases of the Lymphatic and Glandular System* caused 68 admissions, or a ratio of 53·9 per 1,000, higher than last year's rate by 8·9.

*Diseases of the Urinary System* caused only 2 admissions.

*Diseases of the Generative System.*—There were 121 admissions for these diseases, equal to a ratio of 96·0, being less than last year's rate by 13·1 per 1,000, and by 17·5 than the seven years' average rate. Most of the cases were due to simple venereal ulcer.

*Diseases of the Organs of Locomotion* caused 22 admissions, or a rate of 17·4 per 1,000, an increase of 8·3 compared with 1892.

*Diseases of the Connective Tissue.*—There were 59 admissions for these diseases with a rate of 46·8, which is lower by 8·2 than the previous year's rate.

*Diseases of the Skin* caused 82 admissions, giving a ratio of 65·0 per 1,000, being lower than the rate for 1892 by 16·6, and than the seven years' average rate by 17·7.

*Poisons.*—There were no admissions under this head. One death, however, occurred from cyanide of potassium, but by whom administered there is no evidence to show.

*Injuries.*—The admissions were 133 in number, or a ratio of 105·5 per 1,000, as compared with 116·6 in the previous year. The cases were chiefly contusions, wounds, and sprains.

*Invaliding.*—The number of men invalided home from the West Indies was 28, equal to a ratio of 22·20 per 1,000, compared with 31·64 in 1892, and 23·35, the decennial average rate. The invaliding rate from the Barbados Command was 28·91, and from Jamaica 12·00, compared with 40·45 and 18·59 respectively, the rates for 1892. With regard to age one man, or a ratio of 52·63, was under 20 years of age, 13 men, or 21·28 per 1,000, were between 20 and 25 years; 6 men, or 12·19, were between 25 and 30 years, and 8 men, or 57·55 per 1,000, were over 30 years of age. As to service in the Command, 7 men, or 8·39 per 1,000, were under 1 year's service; 12, or 4·22, were in their second year; 7, or 66·67 per 1,000, were in their third year; and 2 men, or 25·00, had 3 years' service in the Command. The causes of invaliding were five for nervous disorders (including 2 of mental disease), three each for debility, rheumatism, and digestive disorders; two each for malarial fever, diseases of the eye, diseases of the ear, diseases of the circulatory system, and diseases of the organs of locomotion, and one each for tubercular disease, chronic bronchitis, disease of the skin, and fracture.

The number of men discharged the service during the year as medically unfit was 21, equal to a ratio of 16·65 per 1,000, as against 20·00 in previous year, and 13·26, the decennial average rate. The principal disabilities necessitating discharge were diseases of the nervous system 6 cases (including 2 of mental disease), rheumatism and diseases of the digestive system 3 cases each, diseases of the eye and circulatory system 2 cases each, &c., &c.

*Officers.*—The average strength was 122, of which 54 were in the Barbados Command, and 68 in Jamaica. The attacks of illness were 34 in the former and 39 in the latter, a total of 73, giving an admission ratio of 598·4 per 1,000, an increase of 124·3 on the rate for 1892. There were no deaths, and the invaliding rate was 8·20 as against 8·62 in the previous year. The principal causes of sickness were influenza, simple continued fever, malarial fevers, and diseases of the digestive system.

*Women.*—The average strength was 101, and the admissions 59, giving a *West Indies* ratio per 1,000 of 584.1, higher by 123.4 than in the previous year. There were no deaths.

*Children.*—The average strength was 170, the admissions 122, and there were 2 deaths, the respective ratios being 717.6 and 11.76 per 1,000, compared with the rates for 1892 the former was higher by 220.6, but the latter lower by .36. The principal causes of sickness were simple continued fever, diarrhoea, and bronchitis. The two deaths were due to convulsions and croup, and occurred in Barbados.

*Sanitary Conditions.*—The Senior Medical Officer of the Barbados Command reports that the general health of the troops has been good, venereal cases being the principal cause of admission. The ventilation of barracks, huts, &c. throughout the district was satisfactory, and the amount of cubic and superficial space per man well maintained. The water supply is good, and the dieting and clothing satisfactory. In Barbados, automatic flushing cisterns have been provided for all urinals, and all old waterclosets removed, and new combination closets provided throughout the garrison (soldiers' latrines excepted). New washing troughs have been provided to laundry, two Deane's boilers to cook-house, and water laid on to warrant officers' quarters, Station Hospital; a recreation room has been provided for detachment 2nd West India Regiment at Stone Barracks, and a bath to warders' quarters, military prison. At St. Lucia a system of drainage by piping and an open concrete channel from the Morne through Courbarie to the sea for the disposal of foul water is close on completion; this system is to be flushed from the three reserved tanks which have recently been constructed. The system of carrying soil from earth closets out to sea works well. A skittle alley has been erected at Vigie, but further means of recreation are very desirable in St. Lucia. A block of 14 married quarters with accessories (except washhouses) has been completed and is now occupied, temporary washhouses are provided. A Morris tube gallery has been completed. Drying rooms are in course of erection. The shingle roof of iron barracks has been replaced by galvanized iron; a similar change is to be made in the hospital roof.

At Jamaica the Senior Medical Officer reports that an extra block of non-commissioned officers' married quarters for the white sergeants of the West India Regiment and the staff sergeants of Up Park Camp has been completed and occupied, and now all the necessary barrack accommodation both at Up Park Camp and Port Royal that was required has been provided, except at the Station Hospital, Up Park Camp, where barracks for the men of the Medical Staff Corps, and improvements in the linen and other stores are much required. The arrangements for filtering the water to Up Park Camp, referred to in last year's report, are, it is believed, being matured, but they are not yet commenced.

## II.—BLACK TROOPS.

The average strength of non-commissioned officers and men, exclusive of white sergeants, was 1,557, 484 being stationed in the Barbados Command and 1,073 in Jamaica. The force in the Barbados Command consisted of the St. Lucia Company Royal Artillery, some men of the West India Fortress Company, Royal Engineers, and detachments 2nd Battalion West India Regiment. The stations occupied were Barbados, average strength 329, and St. Lucia, average strength 155. In Jamaica, were the Jamaica Company Royal Artillery, the West India Submarine Mining Company, and the West India Fortress Company, Royal Engineers, the headquarters 2nd Battalion West India Regiment, and the Depot, West India Regiment. The stations occupied were Up Park Camp and Port Royal, average strength 877 and 196 respectively.

*West Indies.* The principal statistics of sickness and mortality among the black troops in the two divisions, as well as among those serving in the West Indies as a whole, are given in the following table :—

1893.	Average Strength.	Admissions.	Deaths			Invalids	
			In the Command.	Of Invalids.	Total.	Sent Home.	Finally Discharged.
Barbados Command	484	508	5	—	5	—	23
Jamaica Command	1,073	908	8	—	8	—	34
West Indies	1,557	1,476	13	—	13	—	56

*continued.)*

1893.	Average Constantly Sick.	Ratio per 1,000 of Strength.				
		Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
Barbados Command	34·34	1049·6	10·33	—	45·45	70·95
Jamaica Command	77·76	902·1	7·45	—	31·69	72·47
West Indies	112·10	948·0	8·35	—	35·96	72·00

Comparing the results for the Barbados Command with the corresponding ratios in the previous year, there is a decrease of 249·7 in the admission rate, one of ·76 in the death rate, and one of 12·31 in the ratio of constantly sick. The average sick time to each soldier was 25·90 days, and the average duration of each case of sickness 24·68 days, the former being shorter than the corresponding period in the previous year by 4·57 days, and the latter longer by 1·23 days.

In the Jamaica Command, compared with the results in 1892, the admission rate is lower by 390·6, the death rate by 12·46, and the constantly sick rate by 5·60 per 1,000. The average sick time to each soldier was 26·45 days, and the average duration of each case of sickness 29·32 days, the former being shorter by 2·12, and the latter longer by 7·22 days than in the preceding year.

Taking all the troops in the West Indies together, the admission ratio shows a decrease of 347·0, the constantly sick rate one of 7·86, and the death rate one of 8·51 per 1,000. Compared with average ratios for the previous ten years, the decrease in admission rate was equal to 250·6, and that in the death rate to 5·34 ; but there is an increase of 2·25 in the constantly sick rate. The average sick time to each soldier was 26·28 days, shorter than in the previous year by 2·95, but longer than the average period for the preceding ten years by ·82 of a day. The average duration of each case of sickness was 27·72 days, longer than in 1892 by 5·15 days, and than the decennial average period by 6·48 days.

With regard to the sickness and mortality of corps in Barbados, the admission rate for the St. Lucia Company, Royal Artillery, was 1234·5, and the death-rate 12·34 per 1,000 ; that for the West India Fortress Company,

Royal Engineers, 1470·6, and for the detachments 2nd Battalion West India Regiment, 992·2, and a death rate of 10·36 per 1,000. In Jamaica the Jamaica Company, Royal Artillery, had an admission ratio of 1085·1. The West India Submarine and Fortress Companies, Royal Engineers, an admission rate of 534·6, and the 2nd Battalion, West India Regiment, an admission rate of 910·0 and a death rate of 11·63 per 1,000. In the Depot, West India Regiment, the admission rate was 1016·4 per 1,000.

The sickness according to age, taking the troops in the West Indies together, shows that in men under 20 years of age the admission rate was 597·9, as against 1299·3 per 1,000 in the previous year. In men from 20 to 25 the rate was 1423·9, as against 1781·5. In those from 25 to 30 it was 674·9, as against 956·3, and in those of 30 years of age and upwards it was 459·6, as against 733·9 in 1892.

The mortality rates as compared with the previous year's returns are as follows:—In men under 20 there was no mortality; in men from 20 to 25 years 9·31, against 15·74; in those between 25 and 30 years 9·50, against 17·11, and in those over 30 years 10·10, against 16·13 per 1,000.

With regard to length of service the admission rate in those in their first year of service was 1102·2 as against 1030·8 in the previous year. In the second year the rate was 885·0 as against 3351·3. In the third year the rate, 1349·6, contrasted favourably with 1652·8 in 1892. In men with over 3 years' service the rate was only 742·4, against 1184·1 per 1,000 for the previous year. The mortality rate in those under 1 year's service was 2·76, against 18·93; in the second year 12·46, against 18·02; in the third year nil, and in men over 3 years 9·09, against 14·44 per 1,000 for 1892.

In Abstract VIII. will be found the chief statistics of sickness and mortality arranged according to the different groups and orders of diseases.

**GENERAL DISEASES.—Diseases dependent on Morbid Poisons.**—The admissions under the head of *eruptive fevers* were 6 in number, equal to an admission rate of 3·9 per 1,000, a considerable decrease as compared with the rate for 1892. *Enteric fever* caused 8 admissions and 4 deaths, or rates of 5·1 and 2·57, both being roughly half those of last year, but showing an increase when compared with the average rate for the previous seven years of 1·9 and ·98 respectively. Two admissions and two deaths occurred at Barbados, and the remainder at Jamaica. *Other continued fevers* caused 105 admissions, or an admission rate of 67·4 per 1,000, much below the rate for 1892. *Dysentery* caused 20 admissions.

*Malarial Fevers.*—Only 54 cases were admitted, compared with 133 in 1892. The ratio, 34·7, compares very favourably with 101·9 in the previous year. There were no deaths.

*Venereal Diseases.*—The admissions for *primary syphilis* were 193 in number, equal to a ratio of 124·0 per 1,000, being an increase on last year's rate of 39·7. Of these 11, or a rate of 22·7 per 1,000, occurred in Barbados, and 182 cases, or 169·6 per 1,000, in Jamaica. Including the sickness from simple venereal ulcer, the admission ratio for primary venereal sores was 167·6, being less than the previous year's rate by 31·6, and than the average rate for the previous seven years by 42·0 per 1,000. The constantly sick rate was 15·97, being less than in 1892 by 1·10, and than the average rate by 2·12 per 1,000. In the Jamaica Command the admission rate was 174·3, and the constantly sick rate 17·71, the former showing a decrease of 23·5 and the latter an increase of ·27 per 1,000 as compared with 1892. In the Barbados Command the admission and constantly sick rates equalled 152·9 and 12·11, as compared with 201·7 and 16·39 per 1,000 in 1892. The admissions for *secondary syphilis* in the West Indies were 84, and 10·15 men were constantly sick, giving ratios of 53·9 and 6·52 per 1,000 respectively as compared with 52·1 and 6·01, the rates for the previous year, and with 45·1 and 4·05, the average rates of the previous seven years. In the Jamaica Command only, the admission rate was 46·6 and constantly sick rate 6·74, as against 39·8 and 4·55 in the previous year. In the Barbados Command the corresponding ratios were 70·2 and 6·03, showing a decrease when compared with 1892 of 5·2 and 2·73 per 1,000. *Gonorrhœa* caused 218 admissions, and 18·60 men were constantly sick, giving ratios of 140·0 and 11·95. Contrasted with the previous year there is a decrease of 10·2 in the admission rate, but an increase of 1·07 in the constantly sick rate.



*West Indies.*

The seven years' average rates equalled 171·6 and 10·21 respectively. In the Jamaica Command the corresponding rates were 131·4 and 12·81, compared with 133·5 and 9·10 in the previous year. In the Barbados Command the like rates were 159·1 and 10·02, showing a decrease when compared with 1892 of 22·7 and 4·24 per 1,000 respectively. Including all forms of venereal disease the total admission ratio in the West Indies was 361·5 and constantly sick rate 34·44. As compared with 1892 there is a decrease in the admission rate of 40·0, but a fractional increase in the constantly sick rate. Contrasted with the seven years' average ratios there is a decrease in the former rate of 64·8, but an increase in the latter of 2·09.

*Rheumatism* caused 61 admissions, or an admission rate of 39·2, comparing favourably with 64·4 in 1892.

*Tubercular Diseases* gave rise to 13 admissions and 6 deaths, or ratios of 8·4 and 3·85 per 1,000. Compared with 1892 both rates show an increase. 12 of the admissions and 5 deaths were due to lung affection.

**LOCAL DISEASES.**—Of these the only orders calling for special comment are the following :—

*Diseases of the Respiratory System.*—These caused 67 admissions but there was no death. The admission rate, 43·0, is below the rate for 1892 by 16·8 per 1,000, and below the seven years' average rate by 11·1. Bronchitic affections were the principal cause of admission.

*Diseases of the Digestive System.*—There were 83 admissions and 1 death, being in the ratios of 53·3 and 64 per 1,000. Compared with the previous year's admission rate there is a decrease of 19·5 per 1,000, and compared with the seven years' average rate one of 19·8. The principal causes of admission were sore throat, dyspepsia, and diarrhœa. The death was due to diarrhœa.

*Diseases of the Generative System* caused 105 admissions. The admission ratio was 67·4, being below the rate for 1892 by 81·3, and also below the seven years' average rate by 72·3 per 1,000. A very large proportion of the cases were due to simple venereal ulcer.

*Diseases of the Skin* gave rise to 113 admissions, or an admission rate of 72·6 per 1,000 below last year's rate by 63·0, and below the seven years' average rate by 11·5.

*Injuries* caused 101 admissions, or a rate of 64·9 per 1,000, but there were no deaths. The rate compares favourably with 1892.

*Invaliding.*—The number of men finally discharged the service as medically unfit was 56, being in the ratio of 35·96 per 1,000, an increase of 8·37 when compared with 1892, but a decrease of 5·80 when compared with the previous decennium. In the Jamaica Command 34 men, or a ratio of 31·69, were discharged, being an increase of 7·10 on last year's rate. In the Barbados Command 22 men, or a rate of 45·45, were discharged. Compared with 1892 there is an increase on this rate of 12·19. The principal disabilities necessitating discharge were secondary syphilis, rheumatism, eye, and tubercular diseases.

*Women and Children.*—The average strength of women was 67, the admissions numbered 30, and there were 2 deaths. The average strength of the children was 47, and there were 16 admissions, but no death occurred.

*Sanitary Conditions.*—The Senior Medical Officer, Barbados, reports that the health has been good. The water supply was good, the drainage satisfactory, clothing suitable, and the quality of the dieting was good and the quantity sufficient. The duties of the men were conducive to health.

The Senior Medical Officer, Jamaica, offers no special remarks.

## VII.—ON THE HEALTH OF THE TROOPS SERVING IN WESTERN AFRICA.

### *Sickness and Mortality.*

#### I.—WHITE TROOPS.

The white troops consisted of the officers serving in the Command, the European non-commissioned officers of the 1st Battalion West India Regiment, and the non-commissioned officers and men of the Royal Artillery and the Royal Engineers, the latter only remaining on the coast during the dry season from November to May. The average strength of the non-commissioned officers and men of the white troops was 37, and there were 71 admissions into hospital, equal to a ratio of 1918·9 per 1,000, a decrease of 1636·7 as compared with the corresponding rate in the previous year. Fifty-eight of the admissions were for remittent fever. There was one death from remittent fever. Six men were invalided, 3 for debility, and one each for dysentery, malarial cachexia, and remittent fever. The average strength of officers was 29, and there were 51 attacks of illness, equal to a ratio of 1758·6, a decrease of 616·4 as compared with the corresponding rate in the previous year. There were no deaths. Three officers were invalided during the year, being at the rate of 103·45 per 1,000, as compared with 93·75 for 1892. Forty-two of the attacks of illness were due to malarial fever, as many as 34 being of the remittent form.

#### II.—BLACK TROOPS.

The average strength of non-commissioned officers and men was 912; of these 834 were stationed at Sierra Leone, and 78 at Bathurst, Gambia. These troops consisted of the 1st Battalion West India Regiment and detachments of the West Indian Fortress Company and West African Artillery.

The more important of the statistics of sickness and mortality are given in the following table:—

1893. Average Strength.	Admissions.	Deaths			Invalids			Average constantly Sick.	Ratio per 1,000 of Strength.				
		In the Command.	Of Invalids.	Total.	Sent to West Indies.	Finally Discharged			Admissions.	Deaths.	Invalids sent to West Indies.	Invalids finally Discharged.	Constantly Sick.
912	1,503	10	1	11	—	30	72·25	1648·0	12·06	—	32·90	70·22	

Compared with corresponding results in the previous year a decrease of 732·8 has occurred in the ratio of admission, one of 30·13 in that of mortality, and one of 25·16 in that of constantly sick, and in comparison with similar average ratios for the preceding ten years a decline is also observed in these ratios, being 228·5 in the case of admissions, 11·76 in that of mortality, and 3·93 in that of constant inefficiency through sickness. The average sick time

*West Africa.* to each soldier was 28·92 days, which is shorter than the corresponding period in the previous year by 9·28 days, and than the similar average period for the preceding ten years by 1·45 days. The average duration of each case of sickness was 17·55 days, being longer than in 1892 by a day and a half, and than the decennial average period by 1·37 days.

The admissions, mortality, invaliding, &c. in the different groups and orders of diseases are given in Abstract IX.

**GENERAL DISEASES.**—*Diseases dependent on Morbid Poisons.*—There were 5 cases of *dysentery* under this heading.

*Malarial Fevers.*—There were 691 admissions, against 1,165 in the previous year. The ratio of admission was 757·7, and of constantly sick 23·99 per 1,000, being lower in both cases than in the previous year by 471·2 and 12·51 per 1,000. Comparing these rates with the average rates for the previous seven years there is also a decrease, of 181·4 and 45 respectively. The majority of admissions was for remittent fever, which was not of so severe a type as in 1892.

*Venereal Diseases.*—Under the head of *primary syphilis* 30 admissions are returned, or a rate of 32·9, showing a decrease when compared with 1892 of 31·4, and when compared with the average of the previous seven years of 25·1 per 1,000. Adding the sickness for simple venereal ulcer, the ratio of admission for primary venereal sores was 61·4, and for constantly sick 4·46. Compared with the previous year these rates show a decrease of 15·6 and 2·50 respectively, and in comparison with the seven years' average there is a decrease of 41·7 and 4·60 per 1,000. *Secondary syphilis* caused 73 admissions. The ratio of admissions was 80·1, and of constantly sick 7·08. Compared with 1892 there is an increase in both rates of 40·0 and 3·79 respectively, and when compared with the seven years' average there is a somewhat similar increase. The admissions for *gonorrhœa* numbered 96. The admission rate equalled 105·2, and the constantly sick rate 6·04. In comparison with last year and the seven years' average rate there is a decrease of 47·8 and 1·01 in the former, and one of 45·9 and 2·51 respectively in the latter. Including all forms of venereal disease, the admission ratio amounted to 246·7, and the constantly sick rate to 17·58 per 1,000. Compared with 1892 there is a decrease of 23·4 in the former, but an increase of 28 in the latter. In comparison with the previous seven years' rate there is a decrease of 50·0 in the former and of 4·37 in the latter.

*Parasitic Diseases* caused 5 admissions, and for *debility* 9 cases were admitted.

*Rheumatism* was the cause of 66 admissions, compared with 110 in 1892. The ratio, 72·4 per 1,000, shows a decrease of 43·6 when compared with last year, and of 21·3 when compared with the seven years' average rate.

*Tubercular Diseases* gave rise to 18 admissions and 4 deaths as compared with 11 and 5 in 1892. Sixteen of the cases and all the deaths were due to tubercle of lung.

*Diseases of the Respiratory System.*—59 admissions and 5 deaths are recorded under this head, being in the ratios of 64·7 and 5·48 per 1,000. Compared with the rates for last year there is a decrease in the admission rate of 15·5, but when compared with the seven years' average rate an increase of 2·9. The principal causes of admission were bronchial affections 46 cases, and pneumonia 8 cases.

*Diseases of the Digestive System* caused 56 admissions, or a ratio of 61·4. In comparison with last year's rate and the seven years' average rate there is a decrease of 47·3 and 13·3 respectively. The principal cause of admission was diarrhœa (27 cases).

*Diseases of the Generative System.*—There were 44 admissions for these diseases, with a ratio of 48·2 per 1,000. In comparison with last year and the seven years' average rate there is a decrease of 4·5 and 27·2 respectively. The majority of the cases were due to simple venereal ulcer.

*Diseases of the Skin* caused 167 admissions, the ratio being 183·1 per 1,000, an increase of 54·4 as compared with last year, and of 34·3 when compared with the seven years' average rate. The principal causes of admission were itch, boil, ulcer, and ringworm.

None of the other orders of disease require special comment.

*Injuries* were 56 in number, and there were 2 deaths. The ratio of admission, 61·4, is below that for 1892 by 67·2, and also below the average rate by 26·0 per 1,000. The deaths were due to gunshot wound (suicidal) in which case the motive appears to have been jealousy, and asphyxia by hanging (judicial).

*Invaliding*.—30 men were finally discharged the service, equal to 32·90 per 1,000. Compared with last year this rate shows an increase of 25·52, and in comparison with the ten years' average rate one of 25·90. The principal disabilities necessitating final discharge were secondary syphilis, rheumatism, diseases of circulatory system, and injuries.

*Women*.—The average strength of the women was 43, and there were 35 attacks of illness, equal to a ratio of 813·9 per 1,000, which is below that of the previous year by 1112·9. The principal causes of attack were remittent fever 15 cases, and debility 5. There were no deaths.

*Children*.—The average strength was 42, and the admissions 18. The ratio per 1,000 equalled 428·6, below last year's rate by 1032·9. Remittent fever caused 9 attacks, and ulcer 4. There were no deaths.

*Sanitary Conditions*.—The Senior Medical Officer, Surgeon-Major A. Sharpe, reports that the ventilation of barracks, and hospitals has been satisfactory, and that the means of cooking, ablution, &c. have been ample and well looked after. The drainage is all surface, carefully constructed and kept thoroughly clean. The remark in last report, regarding the necessity of more vegetables in the men's rations, is repeated.

# VIII.—ON THE HEALTH OF THE TROOPS SERVING IN SOUTH AFRICA AND AT ST. HELENA.

## *Sickness and Mortality.*

*South Africa  
and St.  
Helena.*

The average strength of the warrant officers, non-commissioned officers, and men serving in the Command during the year was 3,214, and of these 198 were stationed at St. Helena.

The force comprised the 3rd Dragoon Guards, No. 4 Mountain Battery, Royal Artillery, which left for England in July, No. 10 Mountain Battery, Royal Artillery, which arrived from England in the same month, No. 8 Company, Southern Division, Royal Artillery, No. 29 Company, Royal Engineers, the 1st Battalion East Yorkshire Regiment, until May, when it left for Egypt, the 2nd Battalion West Riding Regiment, which arrived from West Indies in May, the 2nd Battalion York and Lancaster Regiment, four companies 1st Battalion Royal Highlanders, which arrived from Egypt in April, and four companies 1st Battalion North Staffordshire Regiment, which left for Malta in the same month, detachments Army Service Corps, Medical Staff Corps, and Ordnance Store Corps, and Garrison Staff throughout the year.

At St. Helena the garrison consisted of one company of infantry and small detachments of artillery, engineers, and departmental corps.

The following table gives the more important of the statistics of sickness and mortality among the troops in South Africa and St. Helena separately, as well as those for the whole Command :—

1893.	Average Strength.	Admissions.	Deaths			Invalids	
			In the Command.	Of Invalids.	Total.	Sent Home.	Finally Discharged.
South Africa - - -	3,016	2,787	15	—	15	71	31
St. Helena - - -	198	143	2	—	2	8	4
Total - - -	3,214	2,930	17	—	17	79	33

(continued.)

1893.	Average constantly Sick.	Admissions.	Ratio per 1,000 of Strength.			
			Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
South Africa - - -	167·79	924 1	4·97	25·54	11·27	15·63
St. Helena - - -	8·42	722·2	10·10	40·40	20·20	42·53
Total - - -	176·21	911 6	5·29	24·53	11·82	54·83

Compared with corresponding ratios in the previous year a decrease is observed in the admission rate of 57·9, in that of mortality of ·32, and in that of constantly sick of 1·13. Compared with similar average ratios for the preceding 10 years there is an increase of 94·5 in the admission rate, and one of 2·14 in the constantly sick rate, but the death rate shows a decline of 1·73. The average sick time to each soldier was 20·01 days, as compared with 20·48 in the previous year, and 19·33 days, the average for the preceding 10 years. The average duration of each case of sickness was 21·95 days, which was longer by ·82 of a day than that for the preceding year, but shorter by 1·58 days than the decennial average period.

*South Africa  
and St.  
Helena.*

For South Africa the admission rate shows a decrease of 58·0, and the constantly sick rate one of 1·55, as compared with the preceding year. The death rate is the same as that for 1892. In St. Helena the admission rate has declined by 41·2 per 1,000, while the constantly sick rate has increased by 6·35. The death rate was 6·03 per 1,000 lower than that for the previous year.

The principal statistics of sickness and mortality in the different arms of the service, and in the several corps which served in the Command during the years, will be found in Abstract XL. It will be observed that among the arms of the service the highest admission ratio, 1132·5, was in the cavalry, the next, 987·2, in the artillery, followed by 902·9 in the infantry, and 594·3 in the engineers. Mortality was highest, 9·43 per 1,000, in the engineers, and lowest, 4·02 per 1,000, in the cavalry. Constant inefficiency through sickness was greatest in the artillery, 58·85, and least in the engineers, 32·36 per 1,000. Taking individual corps, and excluding those whose average annual strength was less than 100 men, the highest ratio of admission was 1142·0 per 1,000, in the 3rd Dragoon Guards, the next highest being, 1099·4, in the 8th Company, Southern Division, Royal Artillery. The lowest admission rate occurred in the 29th Company, Royal Engineers, 594·3 per 1,000. The highest mortality rate was 9·43 per 1,000, in the Royal Engineers, and there were no deaths in the 2nd Battalion West Riding Regiment or the 1st Battalion Royal Highlanders. The highest annual rate of constantly sick was 86·61, in the 1st Battalion North Staffordshire Regiment, and the lowest in the Royal Engineers, 32·36 per 1,000.

With regard to the influence of age and length of service in the Command on sickness and mortality among the troops, it is calculated that the admission ratio among men under 20 years of age was 818·7 per 1,000, that among men between 20 and 25 years of age 1146·5, that among men between 25 and 30 years 812·2, that among men in the next quinquennium 472·8, and that among men over 35 years of age 267·2 per 1,000. In the preceding year also the highest admission rate was at the same period of age, viz., between 20 and 25 years, and the sequence of ratios was similar throughout, but the individual ratios were all higher than the corresponding ones in the year under report. The mortality rate among men under 20 years of age was *nil*, that among men between 20 and 25 years of age 7·64 per 1,000, and those among men in the next two quinquennia ·85 and 17·01 respectively, after which no mortality occurred. In the preceding year the highest mortality rate was amongst men over 35 years of age.

As to service in the Command the admission ratio was 1018·8 per 1,000 among men in their first year, 888·0 among men in their second year, 743·6 among men in their third year, 646·5 among men in their fourth year, and 767·1 among men over four years' service. In the preceding year also the admission rate was highest among men in their first year of service in the Command. Mortality was highest among men under two years' service in the Command, the ratio being 9·33 per 1,000, among men in their first year 3·04 per 1,000, among men in their third year 5·09 per 1,000, among men in their fourth year it was 8·62 per 1,000, and among men over four years' service it was 9·13. In the preceding year the highest mortality rate was amongst men in their fourth year.

The statistics of sickness and mortality among the troops arranged according to the different groups and orders of disease are shown in Abstract X.

**GENERAL DISEASES.—Diseases dependent on Morbid Poisons.**—Under the head of *eruptive fevers* 6 admissions are returned, equal to a ratio of 1·9 per 1,000. They were all cases of epidemic rose rash.

South Africa  
and St.  
Helena.

*Enteric Fever* was the cause of 27 admissions and 3 deaths, being in the ratios of 8·4 and ·93 per 1,000 respectively. The admission ratio is lower than that of the previous year by 1·9, but higher than the average ratio for the previous seven years by ·2. The mortality rate is lower than in the preceding year by ·63 per 1,000, and lower than the seven years' average ratio by ·83 per 1,000. The per-centage of mortality to attack was 11·11, as compared with 15·15 in the previous year, and 21·43, the average for the past seven years. Of the admissions 17 occurred in Natal and 10 in Cape Colony. The average age of those attacked was 23 years, and the average time in the Colony 14 months. The Senior Medical Officer, Natal, remarks that "the disease is " more prevalent during the wet summer months and is of a severe type." Of the cases in Cape Colony 4 occurred in Cape Town, 3 made good recovery, while one proved fatal; three were at Wynberg, all of which were mild and made good recoveries, and 3 at Simon's Town, one of which was of a very severe type, being complicated by phlebitis of one leg.

*Simple Continued Fever* caused 131 admissions, the ratio being 40·8 per 1,000, a decrease of 11·2 on the corresponding rate in the previous year, but higher by 3·5 than the average seven years' rate; 118, or 76·28 per 1,000, occurred in Natal, 97 being at Pietermaritzburg, and 21 at Eshowe; 12 cases, or 8·17 per 1,000, in Cape Colony, 6 being at Wynberg, 5 at Cape Town, and 1 at Simon's Town; 1 case, or 5·05 per 1,000, occurred at St. Helena. They were, generally speaking, mild, and were attributed to climatic influence.

*Dysentery*.—19 admissions are returned, equal to a ratio of 5·9 per 1,000, an increase of 1·9 per 1,000 on the previous year's rate, but lower by ·4 than the average rate for seven years. The cases were scattered over different stations, 13 being at Pietermaritzburg, 1 at Wynberg, 2 at Eshowe, and 3 at Cape Town.

*Influenza* caused 41 admissions, or 12·8 per 1,000. Of the admissions 35 occurred at Cape Town, 3 at Wynberg, 1 at Simon's Town, and 2 at St. Helena.

The remaining admission in this sub-group of diseases was a case of mumps, which occurred at Pietermaritzburg.

*Malarial Fevers* were the cause of 212 admissions, equal to a ratio of 66·0 per 1,000, which is below last year's rate by 12·8, but above the average ratio by 47·2. Of the admissions 187 occurred at Pietermaritzburg. The cases were with one exception among the 3rd Dragoon Guards, who contracted the disease in India. There were 7 cases in Cape Colony, 6 being at Cape Town and 1 at Wynberg; 1 case of remittent fever occurred at St. Helena; 17 cases of ague occurred at Eshowe, Zululand (all of which were amongst the convalescents of the 3rd Dragoon Guards from Pietermaritzburg).

*Septic Diseases* show 8 admissions from erysipelas, the rate being 2·5 per 1,000, an increase on the corresponding rate in the previous year.

*Venereal Diseases*.—The admissions for *primary syphilis* were 185 in number, equal to a ratio of 57·5 per 1,000, a decline of ·5 from the rate in previous year, and below the average rate for seven years by 34·0. Including the sickness from simple venereal ulcer, the admission ratio for *primary venereal sores* was 88·6 per 1,000, which is higher than in the preceding year by 8·5. The number of admissions from simple venereal ulcer was 100, and the number constantly sick 7·52. *Secondary syphilis* caused 161 admissions. The admission ratio, 50·1 per 1,000, is lower by 18·4 than in the preceding year, and by 9·4 than the average ratio for seven years. *Gonorrhoea*, with 376 admissions, caused a ratio of 117·0 per 1,000, which is greater than the corresponding rate in the previous year by 18·2, and higher than the average rate by 23·7. Including all forms of venereal diseases, the total admission ratio was 255·7 per 1,000, which is higher than the previous year's rate by 8·3, but lower than the average rate of seven years by 17·9. The total amount of constant inefficiency was equal to 21·90 per 1,000, which is below the previous year's rate by ·80, but above the average rate by ·97.

*Parasitic Diseases* caused 3 admissions, all for *tænia solium*, as compared with 7 in the previous year.

*Alcoholism*.—There were 6 admissions, against 2 in the preceding year.

*Debility, &c.*—Under this heading there were 17 admissions for debility and 2 for malformation of toe. The ratio of admissions, 5·9 per 1,000, is below that of previous year by 8·1, and the average rate by 9·7.

*Rheumatism* caused 109 admissions, equal to a ratio of 33·9 per 1,000, an increase of 4·3 on the last year's rate, but a decline of 8·2 from the average rate.

*Tubercular Diseases.*—7 admissions were recorded. The ratio of admission, 2·2 per 1,000, is higher than in the previous year by 1·0, but lower than the average rate by ·5. All the cases were of lung affections.

*Other Diseases* comprised 8 of papilloma, 9 of warts, 2 of scrofula, 6 of anæmia, and one of diabetes mellitus, the last fatal.

*LOCAL DISEASES.*—*Diseases of the Nervous System.*—Nervous diseases, including 3 for mental affections, caused 20 admissions, equal to a ratio of 6·2 per 1,000, which is lower than the corresponding rate in the previous year by 4·4, and than the average rate for seven years by 3·2. The principal causes of admission were neuralgia 12 cases, epilepsy 1, megrim 1, vertigo 1, hemiplegia 1, and apoplexy 1. One death occurred from apoplexy.

*Diseases of the Eye* caused 49 admissions, equal to a ratio of 15·2 per 1,000, a decline of ·4 from the corresponding rate in 1892, and of 2·0 from the average rate of seven years. More than half the admissions were due to conjunctivitis.

*Diseases of other Organs of Special Senses.*—39 admissions are returned, being in the rate of 12·1 per 1,000, a decrease of 2·9 on last year's rate, but an increase of 4·9 on the average rate for seven years. With the exception of one case of nasal affection all the admissions were for aural disease.

*Diseases of the Circulatory System* caused 29 admissions, equal to a ratio of 9·0 per 1,000, which is higher by 2·5 than the previous year's rate, but lower by 2·2 than the average ratio. The cases comprised 14 of palpitation, 12 of affections of the veins, 2 of valve disease of the heart, and 1 of dilatation of the heart. The deaths were due to valve disease of heart, 2 cases, and syncope 1 case.

*Diseases of the Respiratory System.*—102 admissions are returned, being in the ratio of 31·7 per 1,000, which is lower by 4·8 than the ratio for the preceding year, but higher by 6·8 than the average ratio for seven years. The causes of admission were bronchial affections 82 cases, pneumonia 10, inflammation of larynx 2, asthma 2, hæmorrhage 2, pleurisy 2, pneumonic phthisis 1, and empyema 1. The fatal cases were due to empyema in 2 cases, and to pneumonia in 1 case.

*Diseases of the Digestive System* were the cause of 378 admissions, being equal to a ratio of 117·6 per 1,000, which shows a decrease of 14·9 on last year's rate, but an increase of 27·7 on the average ratio. More than half the admissions were caused by affections of the mouth and throat, and among the remainder were 43 cases of diarrhoea, 29 of colic, 42 of dyspepsia, 11 of hernia, 18 of piles, 7 of jaundice, and 6 of hepatitis.

*Diseases of the Lymphatic and Glandular System*, with 65 admissions, caused a ratio of 20·2 per 1,000, which is higher by 5·5 than in the previous year, but lower by 14·9 than the average ratio for seven years.

*Diseases of the Urinary System* caused 14 admissions, equal to 4·4 per 1,000, which is higher than the corresponding rate in the previous year by 1·9, and than the average ratio by ·8. The death was due to Bright's disease.

*Diseases of the Generative System* caused an admission rate of 49·3 per 1,000 compared with 40·5 for the previous year, and with an average rate of 48·8. Of 136 admissions, 100 were for simple venereal ulcers, 17 for orchitis, and 19 for inflammation of testicle.

*Diseases of the Organs of Locomotion.*—40 admissions are recorded, of which 18 were for synovitis. The rate per 1,000, 12·4, shows an increase of 4·9 on that for the previous year, and one of 5·0 on the average ratio for seven years.

*Diseases of the Connective Tissue*, with 87 admissions, gave a ratio of 27·1 per 1,000, which is lower than the previous year's rate by 9·0, and than the average ratio by ·7.

*Diseases of the Skin* caused 186 admissions, equal to a ratio of 57·9 per 1,000, which is lower by 2·6 than the rate in the previous year, and by 1·1 than the average rate for seven years. The principal causes of admission were ulcers, boils, whitlows, and eczema.

*Poisons* gave no admission.

*Injuries.*—415 admissions and 5 deaths are recorded. The admission rate, 129·1 per 1,000, is higher by 10·7 than that for the preceding year, and by 24·4 than the average rate. There were 2 admissions under general injuries,



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for some form of exposure to heat, and 3 deaths from accidental drowning. With regard to local injuries, the principal causes of admission were contusions, wounds, sprains, abrasions, and fractures. There was one death from fracture of base of skull, and one from gunshot wound.

*Invaliding.*—The number of men invalided home during the year was 79, being in the ratio of 24·58 per 1,000, which is lower than the corresponding rate in the previous year by 7·50, and than the average rate for the preceding seven years by 2·16. In the cavalry the invaliding ratio was 42·17 per 1,000, in the artillery 25·53, in the engineers 18·87, and in the infantry 21·24, all being below the corresponding rates in 1892 with one exception, the engineers. According to age, it is observed that 4 men, or 21·98 per 1,000, were under 20 years of age; 48 men, or 33·33 per 1,000, were between 20 and 25 years of age; 18, or 15·23 per 1,000, were between 25 and 30 years of age; 7 men, or 23·81 per 1,000, were between 30 and 35 years of age, and 2 men, or 17·24 per 1,000, were over that age. With the exception of the first and third all these are lower than the corresponding ratios in the previous year. With regard to length of service in the Command, 46 men, or 27·93 per 1,000, were in their first year; 15 men, or 23·33 per 1,000, were in their second year; 9, or 15·28 per 1,000, were in their third year; 5, or 43·10 per 1,000, were in their fourth year, and 4 men, or 18·26 per 1,000, had over that service. The principal causes of invaliding were malarial fever 10 cases, or 3·11 per 1,000; secondary syphilis 11 cases, or 3·42 per 1,000; debility 5 cases, or 1·56 per 1,000; tubercular diseases 4, or 1·24 per 1,000; diseases of the circulatory system 7, or 2·18 per 1,000; organs of locomotion 6, or 1·87 per 1,000; digestive system 5, or 1·56 per 1,000, and local injuries 5, or 1·56 per 1,000. The number of men finally discharged the service was 38, or a ratio of 11·82 per 1,000, a decline of 4·07 on the last year's rate, and below the decennial average rate by 5·33. The principal causes necessitating final discharge were tubercular diseases and diseases of the circulatory and digestive systems.

*Officers.*—The average strength was 137, and there were 55 attacks of illness, equal to a ratio of 401·5 per 1,000, which is lower than that in the previous year by 294·8. The principal causes of sickness were influenza, simple continued fever, wounds, and sprains. Two officers were invalided, one for debility and one for asthma.

*Women.*—The average strength was 194, and the ratio of prevalence of sickness 469·1 per 1,000, a decrease of 161·2 on last year's rate. The principal causes of sickness were simple continued fever 5 cases, ague 7, debility 13, bronchitis 7, dyspepsia 5, diarrhoea 6, and diseases of generative system 10 cases. Two deaths occurred, one from debility and one from pneumonia.

*Children.*—The average strength is returned as 402, and there were 210 attacks of illness and 10 deaths. The ratio of prevalence of sickness was 522·4 and that of mortality 24·88 per 1,000, which are below the corresponding rates in the previous year by 146·7 and 18·60 per 1,000 respectively. Among the cases treated were 37 of measles, 14 of simple continued fever, 32 of bronchial affections, 8 of sore throat, 13 of diarrhoea, 7 of itch, and 6 of wounds. The deaths were 2 from diphtheria, 2 from inflammation cerebral membranes, and 1 each from measles, infantile convulsions, croup, pneumonia, enteritis, and diarrhoea.

*Sanitary Conditions.*—The Principal Medical Officer, Surgeon-Colonel J. Colahan, M.D., reports that the various barracks, camps, &c. are in a fairly satisfactory sanitary state, and every effort has been made to improve their condition.

At the Castle, Cape Town, the condition of the "sluits" is not satisfactory, and the military prison is faulty in construction. The new prison at Wynberg will soon, however, be fit for occupation. The state of the beach in the vicinity of the Castle and Station Hospital has been the cause of frequent complaints, but no improvement can be expected until the new drainage system for Cape Town is carried out. At Pietermaritzburg the surface drainage has been remodelled and cemented. Many of the barrack huts are not suitably constructed for Europeans in this climate. The hospital grounds have been improved, trees and shrubs planted, and a garden laid out. At Simon's Town the present non-dieted hospital is in a most unsatisfactory state and on an insanitary site. A new building is much to be desired.

# IX.—ON THE HEALTH OF THE TROOPS SERVING IN THE ISLAND OF MAURITIUS.

## Sickness and Mortality.

The average strength of warrant officers, non-commissioned officers and *Mauritius*. men was 551, and the force was composed as follows :—The 23rd Company, Southern Division, Royal Artillery, detachment Royal Engineers, headquarters and 4 companies of 1st Battalion North Staffordshire Regiment until March, when it was relieved by the headquarters and 4 companies of the 1st Battalion Royal Highlanders, who arrived from Egypt, detachments of Army Service Corps, Medical Staff Corps, and Garrison Staff.

In the subjoined table will be found the most important of the statistics of sickness and mortality among the troops :—

1893. Average Strength.	Admissions.	Deaths			Invalids		Average constantly Sick.	Ratio per 1,000 of Strength.				
		In the Command.	Of Invalids.	Total.	Sent Home.	Finally Discharged.		Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
551	1,001	8	2	10	82	15	41·29	1816·7	18·14	148·82	27·22	74·94

Compared with the corresponding ratios for the previous year there is an increase of 750·7 per 1,000 in the ratio for admissions, one of ·28 in the death rate, and one of 30·41 in the constantly sick rate; whilst against average rates for the previous decennial period there is an increase of 269·0, ·84, and ·19 respectively. The average sick time to each soldier was 27·35 days, and the average duration of each case of sickness 15·06 days, being an increase of 11·05 days and a decrease of ·23 of a day respectively as compared with previous year, and an increase of ·07 of a day and a decrease of 2·57 days in comparison with corresponding periods for the previous ten years.

In Abstract XL are shown the statistics of sickness and mortality in individual corps. In the artillery the admission and constantly sick rates were 2636·3 and 99·66 per 1,000 respectively, considerably above the corresponding rates of last year. In the engineers these ratios were also high. The infantry rates were 1676·7 and 71·88. These compare with 990·0 and 41·97 respectively for last year.

Taking the sickness and mortality among the troops according to age, it is found that the admission ratio of men under 20 was 500·0 per 1,000, which is 500·0 per 1,000 less than in 1892; the ratio of men between 20 and 25 years of age was 2316·7 per 1,000, which is 836·1 higher than in 1892. Among men from 25 to 30 years the admission ratio was 1542·6 per 1,000, which is 906·2 in excess of that for the previous year, and among men over 30 years the ratio per 1,000 was 895·8, which is 25·4 higher than in 1892. As in the previous year, there were no deaths among men under 20; from 20 to 25 the ratio per 1,000 was 7·12, which is ·63 less than in 1892. Among men from 25 to 30 the ratio was 21·28, lower by 1·45 per 1,000 than in the previous year, and among men of 30 years and upwards the ratio was 41·67 per 1,000, 23·15 per 1,000 higher than in 1892.

As regards the influence of service in the Command for men under one year in the Command, the admission ratio per 1,000 was 1301·3, as compared

*Mauritius.*

with 1116·7 in the previous year. Among men of one year and under two the ratio was 2336·8 per 1,000, the corresponding ratio for 1892 being 1164·8. Among men with two years and less than three the ratio was 3415·8 per 1,000, as compared with 621·9 in the previous year. Among men over three years in the Command the average strength was 2, and there were no admissions; in the previous year there was a ratio of 500·0 per 1,000. There were no deaths among men under one year's service in the Command; in the previous year there was a ratio of 25·38 per 1,000; among men in their second year the ratio per 1,000 was 31·58, as compared with 10·75 in 1892; among men in their third year in the Command the ratio was 56·18 per 1,000, as compared with *nil*. There were no deaths in men over three years' service in the Command.

In Abstract XI. will be found the chief statistics of sickness and mortality arranged according to the different groups and orders of diseases.

**GENERAL DISEASES.**—*Diseases dependent on Morbid Poisons.*—There was one admission for *eruptive fever*. A case of chicken-pox. There were 3 admissions for *enteric fever* and 3 deaths (including that of an invalid after leaving the Command), giving ratios of 5·5 for admissions and 5·44 for deaths per 1,000. The ratio of admissions was 8·8 less, and the death rate fractionally higher than in the previous year, and there were 10·1 admissions less, and 44 deaths more per 1,000 than the average ratios for the previous seven years. Of the 3 cases, 2 were contracted in Fort George and 1 in Fort Adelaide. In the first case the disease, which was contracted in Fort George, could not be traced to any definite cause; the second case followed on drinking unfiltered water during a temporary breakdown in the water supply of Fort Adelaide, and in the third case the patient occupied a quarter in Fort George, not far from and to leeward of the sewage tank; but this non-commissioned officer was also careless in drinking any water which was at hand, filtered or unfiltered.

*Dysentery* caused four admissions, giving a ratio of 7·3 per 1,000, being 5·2 less than in the previous year, and 19·8 less than the average ratio for the previous seven years. The death ratio of the previous seven years was 1·18 per 1,000.

Considering the general insanitary condition of the island, due to the utter neglect of the simplest laws of sanitation on the part of the civil community of all grades, the few cases of enteric fever and dysentery which occur amongst the military is remarkable, and speaks well for the attention to sanitation on the part of the military medical officers. It should also be noted that both enteric and dysentery are endemic in Mauritius.

The *other diseases* of this sub-group were represented by 9 cases of influenza, all of a very mild type, the ratio per 1,000 being 16·3. Influenza of a very severe and fatal type was epidemic in the island during the cold weather, and the immunity of the troops was a most satisfactory incident, and one generally commented on by the civil medical practitioners at the time.

*Malarial Fevers* gave rise to no less than 607 admissions and 5 deaths, giving ratios of 110·6 per 1,000 admissions, and 9·07 per 1,000 deaths; the admission rate being 664·1, higher than in the previous year, and 579·7 per 1,000 higher than the average rates for the previous seven years. The death rate was 9·07 per 1,000 higher than in the previous year, when there were no deaths, and 7·01 higher than the average rate for the previous seven years. The average constantly sick from malarial fever was 21·21, giving a ratio of 38·49 per 1,000; this is 23·58 higher than the corresponding ratio for the previous year, and 16·03 higher than the average ratio for the previous seven years. Of the 607 admissions 447 were cases of remittent fever and 160 cases of ague. Malarial fevers of a severe and fatal type were epidemic in the island during the greater part of the year, and many of the cases were of the type designated "malignant" by the local medical practitioners. In the fatal cases the blood appeared to be quite disorganised as evidenced by petechial eruptions, lividity of the skin, and the presence of blood in the vomited matter, urine, and stools during life, and by a black fluid condition of the blood after death, and very rapid decomposition of the body; the temperatures also ranged very high. There is no question that residence in Port Louis is the chief cause of malarial fever amongst the troops, though undoubted cases have occurred in which the

disease was contracted in Curepipe, over 1,800 ft. above the sea. To obviate this all men whom it is not absolutely necessary to retain in Port Louis (for military reasons) during the unhealthy season are removed to Curepipe, but a company of the infantry regiment and men of the Royal Artillery and Royal Engineers are constantly quartered there, though the two former are relieved once a month, and the head-quarters of the Infantry all permanently quartered at Curepipe. Observation shows that prolonged residence in Mauritius increases the liability to malarial fevers, and that there is no such thing as acclimatisation as regards pure-blooded Europeans, as residence in Mauritius, even when attacks of malarial fevers are escaped, induces a general deterioration of the health.

There were no admissions for *septic diseases* during the year.

*Veneral Diseases.*—17 cases of *primary syphilis* were admitted, giving a ratio of 30·9 per 1,000, which is 17·3 less than in the previous year, and 12·6 less than the average ratio for the previous seven years. Including 22 cases of simple venereal ulcer, the ratio per 1,000 for primary venereal sores was 70·8 per 1,000 as compared with 80·3 in the previous year; none of the cases were of a severe type.

*Secondary Syphilis* caused 7 admissions, all of a mild form of disease, the ratio per 1,000 of admissions being 12·7, as compared with 30·4 in the previous year, and with 29·7, the average ratio for the previous seven years.

*Gonorrhœa* caused 42 admissions, giving a ratio of 76·2 per 1,000, which is 29·8 in excess of that for the previous year, but 35·3 less than the average of the previous seven years.

Including all forms of venereal disease, the admission rate was 159·7, an increase of 2·6 on the rate for the previous year, but a decrease of 75·0 when compared with the seven years' rate. The constantly sick rate for venereal diseases of all forms was 9·64 per 1,000, as compared with 8·32 in the previous year, and 16·52, the average of seven years.

*Parasitic Diseases.*—There was one admission, a case of *tœnia solium*, there being one similar admission in the previous year.

*Debility* caused 3 admissions as compared with 1 in the previous year. One death occurred in an invalid after leaving the Command.

*Rheumatism.*—There were 10 admissions, all of the muscular form, giving a ratio of 18·2 per 1,000, as compared with 5·4 in the previous year; the ratio for the previous seven years being 21·8. The comparative immunity from rheumatism of all kinds, and from acute rheumatism in particular, in the constantly damp, and during some months, cold atmosphere of Curepipe, is rather remarkable.

*Tubercular Diseases.*—There were 3 admissions, all cases of tubercle of the lungs, and all were invalided. The cases were imported by the Black Watch on their arrival from Egypt. The ratio per 1,000 of admissions was 5·4, as compared with 1·8 in the previous year, and 2·3, the average ratio for the previous seven years.

The other diseases of this group were represented by one case of papilloma.

*LOCAL DISEASES.*—*Diseases of the Nervous System* caused 5 admissions, 4 being nervous diseases and 1 mental; the ratio per 1,000 was 9·1, as compared with 12·5 in the previous year, and with 13·8, the average ratio for the previous seven years.

*Diseases of the Eye.*—There were 8 admissions, 5 of them being cases of conjunctivitis, and 1 case each of choroiditis, amblyopia, and hematoma. The ratio per 1,000 of admissions for eye affections was 14·5, as compared with 21·4 in the previous year; it, however, exceeds the average ratio for the previous seven years by 2·4 per 1,000.

*Diseases of other Organs of Special Senses.*—There were 14 admissions, made up as follows:—12 cases of inflammation of external meatus of ear and 2 cases of deafness. The ratio per 1,000 of admissions was 25·4, as compared with 8·9 in the previous year, and with 9·4, the average ratio for the previous seven years.

*Diseases of the Circulatory System.*—There was one admission, a case of valve disease of heart, which was invalided. The ratio per 1,000 of admission was 1·8, as compared with 12·5 in the previous year, and 20·0, the average for the previous seven years.

*Mauritius.*

*Diseases of the Respiratory System* gave rise to 15 admissions, but no deaths. 11 of the admissions were due to bronchitis, 2 to pleurisy, and 1 each to asthma and pneumonia. None of the cases were of a serious nature. The ratio per 1,000 of admissions was 27·2, which is 4·0 higher than the ratio for the previous year, and 6·0 higher than the average ratio for the previous seven years.

*Diseases of the Digestive System* caused 64 admissions, giving a ratio of 116·2 per 1,000, 19·5 lower than in the previous year, and below the average ratio for the previous seven years by 1·5. Among those treated were 24 cases of diarrhoea, sore throat 18 cases, dyspepsia 9, jaundice 3, congestion of liver 2, piles 2.

*Diseases of the Lymphatic and Glandular System.*—There were 23 admissions, giving a ratio of 41·8 per 1,000, which is 9·7 in excess of the ratio for the previous year, but 10·6 per 1,000 less than the average for the previous seven years. 21 of the admissions were due to inflammation of the lymph glands of the groin.

*Diseases of the Urinary System.*—There were 3 admissions, 2 of incontinence of urine, and 1 of nephritis. The ratio per 1,000 of admissions was 5·4, being 3·6 per 1,000 in excess of the ratios for the previous year, while as compared with the average ratios for the previous seven years it is also higher by 7 per 1,000.

*Diseases of the Generative System* caused 32 admissions, giving a ratio of 58·1 per 1,000, 11·7 in excess of the ratio for the previous year, but 7·8 lower than the average for the previous seven years. The cases comprised in this class were 22 of simple venereal ulcer, 4 of balanitis, 3 of stricture of urethra, 2 of orchitis, and 1 of hypertrophy of breast.

*Diseases of the Organs of Locomotion* caused 9 admissions, giving a ratio of 16·3 per 1,000, which is 7·4 in excess of the ratio for the previous year, and also 11·0 higher than of the average for the previous seven years. Eight of the admissions were due to synovitis of knee joint, caused by accident at football, and 1 was a case of inflammation of bone, also due to the same cause.

*Diseases of the Connective Tissue* caused 11 admissions, giving a ratio of 20·0 per 1,000, which is 4 per 1,000 in excess of the ratio for the previous year, 2·1 below the average for the previous seven years. 10 of the cases were small abscesses, and 1 a case of simple inflammation.

*Diseases of the Skin.*—There were 31 admissions for diseases of the skin, giving a ratio of 56·3 per 1,000, which was 6·3 in excess of the ratio for the previous year, and 7 above the average for the previous seven years. The admissions were composed of 13 cases of boils, 6 of whitlows, 5 of ulcer, 2 cases each of itch and eczema, and 1 each of roseola, lichen, and corns.

*Injuries* caused 77 admissions and 1 death (heat stroke). The admission rate was 139·7 per 1,000, higher by 62·9 than last year's rate, and by 39·6 than the rate for the previous seven years. The admissions were chiefly due to sprains, wounds, and contusions. There was one case of self-inflicted wound of the neck; the patient was a private of the Black Watch, who, it subsequently transpired, had been in a depressed condition for some time, consequent on the death of his comrade by an accident in Gibraltar. The wound was not of a very severe nature.

*Invaliding.*—There were 82 invalids sent home, equal to a ratio of 148·82 per 1,000; this was 98·82 per 1,000 higher than in the previous year, and 104·90 in excess of the average ratio for the previous 10 years. The invaliding rate in the Royal Artillery was 431·82 per 1,000, in the Engineers 555·55, and in the Infantry 75·12 per 1,000. 48 of the invalids, or 170·82 per 1,000, were between 20 and 25 years of age; 29, or 154·26, were between 25 and 30, and 5, or 104·17 per 1,000, were 30 years of age and upwards. With regard to service in the Command, 28 men, or 76·71 per 1,000, were under 1 year's service; 49, or 515·79, were between 1 and 2 years' service, and 5, or 56·18 per 1,000, were between 2 and 3 years' service. The causes of invaliding were dysentery in 2 cases, malarial fevers in 68 cases, tubercle of lung in 3 cases, and local diseases in 9 cases.

The number of men finally discharged the service by invaliding was 15, equal to a ratio of 27·22 per 1,000, higher than the rate for last year by 12·94, and than the decennial average by 12·36 per 1,000. Four of the men were

discharged on account of malarial fevers, 4 for nervous diseases, 2 each for *Mauritius*. secondary syphilis, rheumatism, and tubercular diseases, and 1 for disease of the circulatory system.

**Officers.**—The average strength of officers was 35, and there were 23 admissions, giving a ratio of 657.1 per 1,000, lower than last year's rate by 45.6. There were no deaths, but 3 cases were invalided. The principal causes of sickness were remittent fever and dysentery.

**Women.**—The average strength was 32, and there were only 7 admissions, or a ratio of 218.7 per 1,000, lower than last year's rate by 23.7. There were no deaths.

**Children.**—The average strength was 42, and the number of admissions 11, giving a ratio of 261.9 per 1,000, as compared with 193.0 in 1892. No death occurred. The principal cause of sickness was remittent fever.

**Sanitary Conditions.**—The Senior Medical Officer, Brigade Surgeon Lieutenant-Colonel W. H. Clapp, M.D., reports that the year was unusually unhealthy from the excessive prevalence of malarial fever. This was very possibly due to the severe rainfall, and the mass of vegetable *débris* washed down by the great hurricane of April 1892. The following recommendations have been made:—To fill in the moat at Fort George, and to level some of the internal earth works. The provision of Chamberland filters. The removal of the sewage tank in the moat of Fort George, and the extension of the foul drain to the sea. To improve the ventilation of the officers' quarters in the Citadel. The Egyptian scale of clothing to be substituted for that already in use.

The following sanitary improvements have been carried out:—At Port Louis improvement in flushing the moat. The floors of the inhabited casemates at Fort George properly ventilated. At Curepipe the main foul drain has been extended about 150 yards beyond the War Department boundary, and now discharges its contents on the sewage contractor's land to leeward of the camp. The cess pit, into which the foul drain formerly opened, has been filled up. Iron ventilating shafts have been fixed at the heads of the drains. The surface drainage has been improved, and much of the jungle near the barracks cleared away. The new water supply for the barracks and married quarters has been completed, and a constant supply of filtered rain-water laid on to each building. There is no gymnasium in Mauritius; one is much needed.

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## X.—ON THE HEALTH OF THE TROOPS SERVING IN THE ISLAND OF CEYLON.

### *Sickness and Mortality.*

#### 1.—WHITE TROOPS.

*Ceylon.*

The average strength of warrant officers, non-commissioned officers, and men was 1,436. The force comprised No. 16 Company, Southern Division, Royal Artillery, half of No. 41 Company, Royal Engineers, the 2nd Battalion, Royal Warwickshire Regiment, detachments Army Service Corps, Medical Staff Corps, Ordnance Store Corps, Army Pay Corps, and Garrison Staff. Drafts from all corps arrived from England in January.

The headquarters and four companies of the infantry battalion were stationed at Colombo, two companies at Trincomali, and one company at Kandy. One company of infantry is always undergoing musketry instruction at Mount Lavinia. Of the artillery, one half company was stationed at Colombo, and the other at Trincomali, where also were the greater part of the engineers.

In the following table are given the more important of the statistics of sickness and mortality among the troops :—

1893. Average Strength.	Admissions.	Deaths			Invalids		Average constantly Sick.	Ratio per 1,000 of Strength.				
		In the Command.	Of Invalids.	Total.	Sent Home.	Finally Discharged.		Admissions.	Deaths.	Invalids Sent Home.	Invalids Finally Discharged.	Constantly Sick.
1,436	1,160	10	—	10	19	13	60·34	807·8	6·96	13·23	9·05	48·29

If this table is compared with that given for the previous year, it will be seen that the admission ratio has decreased by 2·39·0, the death rate by 2·55, and the constantly sick rate by 2·98; compared with corresponding ratios for the preceding ten years, a decline is also observed in these rates, being as much as 284·8 in the case of admission, 5·48 in that of death, and 11·57 in that of constant inefficiency through sickness. The average sick time to each soldier was 17·62 days, less by 1·14 days than the corresponding period in the previous year, and than that for the average of the preceding ten years by 4·23 days. The average duration of each case of sickness was 21·82 days, which is longer than in 1892 by 3·89 days, and than the decennial average period by 1·81 days.

The statistics of sickness and mortality in arms of the service and in particular corps is shown in Abstract XL.

In the Royal Artillery the admission rate of the half 16th Company, Southern Division, at Trincomali was 620·7, and the constantly sick rate 25·06. The admission rate for half 16th Company, Southern Division, at Colombo, was 957·6, and the constantly sick rate 55·93. The admission rate for the whole of the artillery was 703·8, that for the engineers 557·1, that for the infantry 877·0, and that for the garrison staff and departments 97·6. The death rate in the artillery was 19·23, in the engineers 14·29, in the infantry 3·75, and in the garrison staff and departments, nil per 1,000. The constantly sick rate was 37·15 in the artillery, 36·43 in the engineers, 53·56 in the infantry, and 1·95 in the garrison staff and departments.

The admission rate among men under 20 years of age was 942·9 per 1,000, *Ceylon*. that among men between 20 and 25, 1029·6; that among men in the next quinquennium 511·5, and that among men over 30 years of age 791·2. The death rate among men under 20 years of age was *nil*, among men between 20 and 25 years of age 6·73, among men between 25 and 30 years of age 5·29, and among men over 30 years of age 21·98 per 1,000. Compared with the results in the previous year, there was an increase of 94·1 in the admission rate of men under 20 years of age, a decrease of 98·8 between 20 and 25 years, and in the next quinquennium a decrease of 403·1, and also a decrease of 259·4 in that of men over 30 years of age. Mortality decreased 1·38 among men between 20 and 25 years, 4·49 among men between 25 and 30 years, and 3·34 among men over 30 years of age.

With regard to service in the Command, the admission ratio of men in their first year of service was 650·5, being a decrease of 413·3 on that of the previous year, among men in their second year of service 895·8, a decrease of 529·7, in their third year 900·0, a decrease of 77·3, and among those of longer service 394·4, a decrease of 177·0. The mortality under one year's service in the Command was 5·38, one and less than two years 4·58, two and less than three years 8·33, and among men over three years in the Command it was 42·25 per 1,000. Mortality decreased 3·46 in men of under one year's service, and 24·35 per 1,000 in men of over three years' service, but increased in men of one and less than two years, and two and less than three years' service in the Command.

In Abstract XII. will be found the principal statistics of sickness and mortality arranged according to groups and orders of diseases.

**GENERAL DISEASES.—Diseases dependent on Morbid Poisons.**—No case of *small-pox* occurred during the year, and *eruptive fevers* caused no admissions.

*Enteric fever* caused one admission and one death, being in the ratios of ·7 and ·70 per 1,000, which are lower than the corresponding ratios in the preceding year by 7·2 and ·89, and below the average ratio for the preceding seven years by 9·9 and 3·38 respectively. The percentage of mortality to attack was 100, as compared with 20 in the preceding year, and 38 the average of the previous seven years. The case under consideration occurred at Trincomali; the cause was unknown, it could not be attributed to any insanitary condition, but the medical officer then in charge at that station stated that it was most probably contracted on the journey from Kandy, at which station the deceased had been for change of air.

*Simple Continued Fever* caused 43 admissions, being in the ratio of 29·9 per 1,000, which is lower than in the previous year by 36·7 and by 46·8 than the preceding seven years' rate. The majority of the cases were mild, and were due to climatic causes. There were no deaths.

*Dysentery* caused 25 admissions and 2 deaths, being in the ratios of 17·4 and 1·39 per 1,000, which is higher in the admission rate by 3·9, but lower in the death rate by ·98. Compared with the preceding seven years' average there is a decrease in the admission rate of 3·6, but an increase in the death rate of ·50 per 1,000. The other diseases of this sub-group were represented by one case of influenza.

*Malarial Fevers* caused 37 admissions, being in the ratio of 25·7 per 1,000, which is below that of the previous year by 41·7, and that of the preceding seven years by 10·1. All were cases of *ague*. There were no deaths.

**Venereal Diseases.**—There were 89 admissions for *primary syphilis*, equal to a ratio of 62·0 per 1,000, which is a decrease of 38·7 on the previous year. Including the sickness from simple venereal ulcer, the ratio of admissions for primary venereal sores was 93·3 per 1,000, which is lower than in the previous year by 48·6, and than the preceding seven years' average by 70·5. *Secondary syphilis* caused 99 admissions, being in the ratio of 68·9 per 1,000, which is higher than the rate in the preceding year by 37·2, and by 16·4 than the average rate for the previous seven years, which is due to a considerable extent to many young soldiers having contracted the primary affection at Aldershot prior to their embarkation for this colony. *Gonorrhoea* caused 191



*Ceylon.*

admissions, being in the ratio of 133·0 per 1,000, which is lower than in the previous year by 14·5 and the seven years' average rate by 1·7. Including all forms of venereal disease, the total admission ratio was 295·2 per 1,000, which, compared with the previous year's rate, shows a decrease of 25·9, and a decrease of 55·8 on the average rate for the preceding seven years. The total amount of constant inefficiency on account of these diseases was equal to 23·44 per 1,000, being an increase of 3·75 when compared with the previous year, and an increase of 1·05 on the average rate for the preceding seven years.

*Parasitic Diseases* caused 2 admissions, compared with 5 in the preceding year. The admissions were for *tænia solium*.

*Alcoholism*.—There were 5 cases of alcoholism admitted, compared with 3 in the previous year.

*Debility* caused 12 admissions, as compared with 18 in the previous year, giving a ratio per 1,000 of 8·3, which, when compared with the year preceding, shows a decline of 6·0.

*Rheumatism* caused 48 admissions, compared with 37 in the previous year, giving an increase in the ratio per 1,000 of 4·1, and in that for the preceding seven years of 5·5.

*Tubercular Diseases* caused no admissions, compared with a ratio of 3·2 in the previous year, and of 4·3 per 1,000 for the seven years' average rate.

*Other diseases* of this group consisted of 9 cases of non-malignant new growths (1 lipoma and 8 papilloma), one case of malignant new growth (scirrhous), which proved fatal, and a case of scrofula. The case of lipoma was successfully operated on and returned to duty.

**LOCAL DISEASES.**—*Diseases of the Nervous System* caused 18 admissions, giving a ratio of 12·5 per 1,000, which is 8·5 higher than in the previous year; the principal cause of admission was neuralgia, which contributed 12 out of the 18 admitted. Compared with the preceding seven years' average, there is an increase in the ratio per 1,000 of ·8. There were no deaths.

*Diseases of the Eye* caused 16 admissions, equal to a ratio of 11·1 per 1,000; compared with the previous year there is a decrease of 11·9. Of the admissions 15 were for conjunctivitis.

*Diseases of other Organs of Special Senses* caused 17 admissions, compared with 39 in the preceding year, and a decrease in the ratio per 1,000 of 19·2. Fifteen of the admissions were for inflammation of the external meatus.

*Diseases of the Circulatory System*.—There were 7 admissions for diseases of this group, compared with 12 in the preceding year, a decrease in the ratio per 1,000 of 4·6. Two deaths occurred, one from pericarditis and the other from valve disease of heart.

*Diseases of the Respiratory System* caused 36 admissions and 1 death, giving an admission ratio of 25·0 per 1,000, which is below the rate in the previous year by 4·3. Among the cases were 32 of bronchitis, and 1 case of pneumonia, which proved fatal.

*Diseases of the Digestive System* caused 123 admissions and one death, equal to ratios per 1,000 of 85·6 and ·70 respectively, which, compared with the previous year show a decrease of 32·5 and ·9 respectively. Compared with the preceding seven years' average, there is a decrease of 17·0 and ·96 respectively. The principal causes of admission were dyspepsia 33 cases, diarrhoea 32, sore throat and follicular tonsillitis 15, and hepatic affections 25 cases. The case which terminated fatally was due to abscess of the pancreas.

*Diseases of the Lymphatic and Glandular System* were the cause of 74 admissions, being in the ratio of 52·2 per 1,000, an increase of 2·3 on the corresponding rate in the previous year. Out of the total admissions for this group, 66 were due to inflammation of glands.

*Diseases of the Urinary System* were represented by a single case of inflammation of the bladder, corresponding with last year.

*Diseases of the Generative System* caused 61 admissions, being one less than in the previous year. 45 of the admissions were cases of simple venereal ulcer. The admission rate was 42·4 per 1,000, showing a decrease of 6·8 on the corresponding rate of the previous year.

*Diseases of the Organs of Locomotion* caused 6 admissions, being one more *Ceylon.* than in the previous year, with an increase of .2 in the ratio of admissions.

*Diseases of the Connective Tissue* caused 36 admissions, giving a ratio of 25.0 per 1,000, which is below that of 1892 by 6.7.

*Diseases of the Skin* caused 80 admissions, being less than in the previous year by 35. The admission rate was 55.7 per 1,000, which is 35.5 below the last year's rate, and 18.4 below the seven years' average rate.

*Injuries.*—For general injuries there was one admission compared with none in the previous year; the case was one of multiple injury, the cause of which was supposed to be a fall from the verandah of a barrack room (upper story). Two deaths from asphyxia from submersion occurred, compared with 3 in the previous year, both were accidental. Local injuries caused 107 admissions, compared with 127 in the previous year, the admission rate being smaller by 26.2 than the rate in the preceding year, and 27.9 below the seven years' average rate. The principal causes of admission were contusions, wounds, and sprains.

*Invaliding.*—The number of men invalided to England was 19, being at the rate of 13.23 per 1,000, which is higher than in the previous year by 4.51, but below the preceding ten year's rate by 12.60. The ratios per 1,000 of invalids sent home by arms of the service were as follows: Royal Artillery, 11.54; Royal Engineers, 28.57; Infantry, 13.14; Garrison Staff and Departments, *nil*. Compared with the previous year there is a decrease of 6.08 in the Royal Artillery, an increase of 28.57 in the Royal Engineers, an increase of 5.54 in the Infantry, and in the Garrison Staff, no change. Seven of the men invalided, or 9.42, were between 20 and 25 years of age; nine, or 15.87 per 1,000, were between 25 and 30 years of age; and three, or 32.97, were over 30 years of age. With regard to service in the Command two men, or 5.38 per 1,000, were in their first year of service, eleven men, or 12.60 per 1,000, were in their second year of service; five men, or 41.67 were in their third year of service; and one man, or 14.08, was over three years of service in the Command. The causes of invaliding were dysentery 2 cases, secondary syphilis 3, debility 3, and scrofula, paralysis, neuralgia, epilepsy, conjunctivitis, valve disease of heart, palpitation, diarrhoea, hepatitis, abscess of the liver, and multiple injury one case of each. The number of men finally discharged as medically unfit for further service was 13, equal to a ratio of 9.05 per 1,000, which was higher than that for the previous year by 3.50, but lower than the decennial average by 4.33. Three of the men were discharged for secondary syphilis, and 2 for diseases of the circulatory system.

*Officers.*—The average strength was 53, and the number of attacks of illness 22. There were no deaths. The ratio of sickness per 1,000 was 415.1, being an increase of 81.8 on the corresponding rate of the previous year. Among the cases 3 were for simple continued fever, 1 dysentery, 2 intermittent fever, 2 debility, 4 rheumatism, 2 hepatitis, and 2 fracture, the others being of a trivial nature. Four officers were invalided: 1 for dysentery, 2 for debility, and one for hepatitis.

*Women.*—The average strength was 62, and there were 41 attacks of illness, equal to a ratio of 661.3 per 1,000, which is lower than the corresponding rate of the previous year by 258.0. The principal causes of sickness were intermittent fever, debility, and diseases of the digestive and generative systems. There were no deaths.

*Children.*—The average strength was 107, and the number of attacks of illness 71, and deaths 3, being in the ratios of 663.5 and 28.04 respectively, which are lower than the corresponding ratios of the previous year by 216.8 and 6.15 per 1,000.

The principal causes of illness were fevers, dysentery, conjunctivitis, bronchitis, and diseases of the digestive system. The deaths were due to dysentery 1, infantile convulsions 1, and diarrhoea 1.

*Sanitary Conditions.*—The Senior Medical Officer, Brigade-Surgeon Lieut-Colonel J. Maturin, reports that the sanitary condition of the barracks at all stations has been satisfactory, every effort to keep the vicinity in a good sanitary state and to remedy all defects noticed having been made. There was no overcrowding, and all the barrack-rooms, hospitals, &c., are well ventilated. The water supply has been satisfactory. The dry-earth system of conservancy has been in use in all latrines, but requires constant supervision to ensure its being

*Ceylon.*

carried out satisfactorily, coir dust is frequently substituted for dry-earth and answers the purpose very well.

The following improvements have been made in the rations : good purified white sugar substituted for brown unpurified ; half-an-ounce of ordinary English table salt substituted for one ounce of native unpurified ; best quality (superfine) flour for the manufacture of bread substituted for second quality flour ; and English potatoes were increased from 8 to 11 ozs., non-farinaceous country vegetables being reduced from 6 to 3 ozs.

The clothing was satisfactory and suited to the climate.

The drainage at all stations is surface and satisfactory.

The following are the sanitary improvements of importance carried out during the year :—

Colombo.—Verandahs built to the end of married quarters at Queen Street, this gives an extra room to each quarter. Additional baths for the married quarters at Galte Face have been provided.

Trincomali.—New barracks at Ostenburg ridge for 108 men completed and occupied ; renewal in cement concrete of floors of wards in Station Hospital.

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## II.—ASIATIC TROOPS.

The Asiatic Troops consisted of two companies of Ceylon Royal Artillery, the average strength of which was 189, and the Ceylon Company (Submarine Miners), Royal Engineers, with an average strength of 39. Total strength 228, being an increase of one on the previous year.

The Ceylon Companies Royal Artillery are distributed between Colombo and Trincomali ; and the Ceylon Company (Submarine Miners), Royal Engineers, at the latter station.

The admissions into hospital were 154 in number, equal to a ratio of 675·4 per 1,000 as compared with 1427·3 in the previous year, and the average number constantly sick was 24·78 per 1,000, compared with 45·24 in the preceding year. The principal causes of illness were skin diseases, fevers, rheumatism, diseases of the respiratory system, and debility.

The average sick time to each soldier was 9·04 days, and the average duration of each case of sickness 13·39 days, as compared with 16·56 days and 11·60 days respectively in the year preceding.

Two deaths occurred at Trincomali, one from debility, the other from rheumatism.

## XI.—ON THE HEALTH OF THE TROOPS SERVING IN CHINA.

*Sickness and Mortality.*

## I.—WHITE TROOPS.

The average strength of the troops serving in the Command was 1,414 *(China)* warrant officers, non-commissioned officers, and men. The force consisted of the 25th Company, Southern Division, and District Establishment, Royal Artillery, detachment Royal Engineers, 1st Battalion, Shropshire Light Infantry, with detachments Medical Staff Corps, Ordnance Store Corps, and Garrison Staff throughout the year.

The subjoined table gives the principal statistics of sickness and mortality among these troops :—

1893. Average Strength.	Admissions.	Deaths			Invalids		Average constantly Sick.	Ratio per 1,000 of Strength.				
		In the Command.	Of Invalids.	Total.	Sent Home.	Finally Discharged.		Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
1,414	2,015	17	1	18	25	14	115·97	1425·0	12·73	17·68	9·90	82·01

Compared with a similar table for the previous year the ratio of admission has increased by 149·3 per 1,000, the rate of mortality by ·43, and the rate of constantly sick by 21·91; in comparison with corresponding average ratios for the preceding ten years an increase of 307·7 is observed in the admission rate, one of 2·43 in the death rate, and one of 29·45 in the rate of constant inefficiency through sickness. The average sick time to each soldier was 29·93 days, which is longer by 7·93 days than the corresponding period in the previous year, and by 10·75 than the average of ten years. The average duration of each case of sickness was 21·00 days, longer than in the preceding year by 3·76 days, and than the average decennial period by 3·83 days.

The principal statistics of sickness and mortality according to arms of the service and particular corps will be found in Abstract XL. The highest admission rates occurred in the 1st Battalion, Shropshire Light Infantry, 1593·5, and in the Royal Artillery, 1307·7. The mortality rate was highest in the Royal Engineers, 18·99. The constantly sick rates were in the same order as those for admissions.

Taking sickness and mortality according to age, the admission rate of men under 20 years was 1760·0, between 20 and 25 it was 1971·5, from 25 to 30 it equalled 1088·6, and from 30 upwards, 713·1. All these rates exceeded those for 1892. The mortality rates for the periods referred to were 40·00, compared with *nil* in 1892, 17·39 compared with 7·58, and 8·67 compared with 13·91. Above thirty there was no mortality. In 1892 the rate equalled 26·31.

With regard to length of service in the Command the admission rate for men under 1 year's service was 1495·8, in their 2nd year 1478·7, in their 3rd year 1211·6, and over that period 1170·2. All these rates were above those for the same periods in 1892. The death rates, on the other hand, were lower than last year, with the exception of that for men in their 3rd year of service, and were 8·26, 13·49, 5·29, and 21·27 respectively.

In Abstract XIII. will be found the principal statistics of sickness and mortality arranged according to the different groups and orders of diseases.

China.

**GENERAL DISEASES.**—*Diseases dependent on Morbid Poisons.*—There were 4 cases of *small-pox* during the year.

All the men bore satisfactory marks of vaccination. One of the cases was of a very severe confluent type.

All were sent off to the Colonial Hospital Ship "*Hygeia*" for segregation and treatment, and made good recoveries. *Small-pox* was prevalent among the civil population at the time, and there were a great many deaths from the disease.

*Enteric Fever.*—There were 3 admissions for enteric fever; 1 in the Royal Engineers and 2 in the Shropshire Light Infantry. All young soldiers, and all proved fatal. Every endeavour was made to trace these diseases to their origin. A thorough sanitary inspection of the barracks and surroundings was on the occurrence of each case made. The water and milk were analysed, the milk supply carefully gone into, an inspection made of the dairies, utensils, and surroundings generally, but all without avail. No insanitary condition could be discovered which would in any way account for the disease. It must have had its origin outside the barracks.

*Simple Continued Fever.*—There were 23 admissions for this disease, as compared with 5 in the preceding year. None of the cases call for special comment. There were no deaths.

*Dysentery.*—There were 13 cases of dysentery against 8 in the previous year. One of these proved fatal.

The other diseases of this sub-group are represented by two cases of influenza.

*Malarial Fevers* account for upwards of one-third of the total admissions, or 546·0 per 1,000, against 477·6 in the preceding year, and 444·6, the average for the preceding 7 years. The cases were ague 670, against 507, remittent fever 93 against 152, and malarial cachexia 9 against 1 in the previous year. The large number of cases of remittent fever in 1892 indicates, it is thought, that the disease generally during that year was of a more severe type.

The infantry detachment accommodated in matsheds at Kowloon, furnished in proportion to its strength, a large number of the admissions. The majority of these occurred during the rainy season, and while the men were employed for some hours daily, morning and evening, in the construction of new rifle butts. There was in consequence considerable disturbance of the disintegrated granite, of which the soil at Kowloon mostly consists. Fevers were very rife at this time. It was therefore recommended that the work, so far as European troops were concerned, should be suspended. A marked diminution in the number of fever cases very soon took place, and the detachment became the healthiest portion of the garrison.

Prolonged residence in the colony probably has a deteriorating influence on health and renders individuals more susceptible to climatic influences. The season, too, was an unusual one, the rains commenced late, and continued into the autumn much later than usual, and the rainfall was considerably above the annual average, so that probably meteorological conditions in some degree, contributed to the causation of the sickness. The two wettest months were July and October, the rainfall having been 28·44 and 21·56 inches respectively, and during these two months the troops suffered most from climatic diseases. It is not a little strange that whereas there was so much sickness among the European troops during the year, the Asiatic troops were very healthy, a great contrast with the previous year, in which these conditions were reversed.

Three deaths took place from malarial fevers and cachexia, against 7 in 1892.

*Venereal Diseases.*—There were 69 admissions for *primary syphilis*, being in the ratio of 48·8, a slight increase in the rate for 1892. Including simple venereal ulcer, the ratio of admission for primary venereal sores was 173·3, a decrease of 11·9 per 1,000, compared with last year's rate, but above the average rate for the preceding 7 years by 46·7. *Secondary syphilis* caused 68 admissions, or a ratio of 48·1, an increase in the two previous comparisons of 18·4 and 4·4 respectively. *Gonorrhæa* gave rise to 225 admissions, with a ratio of 159·1, which is higher than the previous one and seven years' rates by 18·7 and 45·5 per 1,000 respectively. Including all forms of venereal disease the admission ratio equalled 380·5, and the constantly sick ratio 28·96. Both

these are above the previous year's rates by 25·2 and 2·27, and the seven years' *China*. rates by 96·6 and 8·46 per 1,000.

*Parasitic Diseases* caused 2 admissions.

*Alcoholism* accounts for 2 admissions, the same number as in the previous year.

*Debility* caused 33 admissions, against 31 in 1892. The ratio 23·3, was slightly above that for the previous year. An invalid died after leaving the Command.

*Rheumatism* caused 30 admissions against 18 in the previous year, an admission rate of 21·2 per 1,000, against 13·0 in 1892, being an increase of 8·2 per 1,000.

*Tubercular Diseases* caused 8 admissions for tubercle of lung, against 5 in the previous year. No deaths occurred under this heading. The *other diseases* of this sub-group included 8 cases of non-malignant new growth, 7 of anæmia, and 1 of purpura, the last named proving fatal.

**LOCAL DISEASES.**—*Diseases of the Nervous System* caused 12 admissions, or a ratio of 8·5, which is above last year's rate by 1·2. Five of the cases were of mental affection. The 2 deaths were due to inflammation of membranes of the brain and paralysis respectively.

*Diseases of the Eye.*—There were 12 admissions for affections of the eye, against 5 in the previous year, being an increase of 4·9 per 1,000. Seven of the admissions were for iritis, and 4 for conjunctivitis.

*Diseases of the other Organs of Special Senses.*—There were 13 admissions as compared with 14 in 1892, and these were all due to aural affections.

*Diseases of the Circulatory System.*—There were 26 cases admitted under this heading, as compared with 21 in previous year, or 18·4 per 1,000, against 15·2, a slight increase. The cases were principally palpitation and valve disease of heart. There were two deaths, one from endocarditis, and one from valve disease of heart.

*Diseases of the Respiratory System.*—There is a large decrease under this heading, as compared with last year and the year before, the admissions having been 27, against 45 and 76 respectively in the two previous years, a decrease of 13·5 and 37·9 per 1,000. Compared with the 7 years' average rate there is a decrease of 10·4. The admissions were due principally to bronchitic affections, 2 deaths, 1 from pneumonia and 1 from pleurisy, took place under this heading.

*Diseases of the Digestive System.*—There were 122 admissions, being in a ratio of 86·3 per 1,000, showing a decrease of 1·3 and 86·3 respectively, compared with last year and the seven years' average rate. Diarrhœa, dyspepsia, sore-throat, piles, and jaundice caused the greater number of admissions.

*Diseases of the Lymphatic and Glandular System* caused 68 admissions, or a rate of 48·1 per 1,000, an increase of 22·0 on the last year's rate, and of 29·2 in the average rate for 7 years. There were 66 cases of inflammation and 2 of suppuration of glands.

*Diseases of the Urinary System.*—Under this head 6 admissions are returned. The death was due to Bright's disease.

*Diseases of the Generative System.*—There is a slight increase in the number of admissions under this heading, as compared with the previous year, the numbers being 213 and 203 respectively. The corresponding ratios were 150·6 and 147·0 per 1,000. Compared with the 7 years' average rate there is an increase of 34·6. Of the total admissions, 176 were due to simple venereal ulcer.

*Diseases of the Organs of Locomotion* caused 10 admissions, against 4 in 1892. Half of the total number of cases was due to synovitis.

*Diseases of Connective Tissue* caused 48 admissions, mostly abscess, against 25 in previous year, an increase of 15·9 per 1,000. Compared with the seven years' average rate the ratio for 1893, viz., 34·0, shows an increase of 10·2.

*Diseases of the Skin* caused 53 admissions, or a ratio of 41·0, a decrease of 29·2 per 1,000 on the previous year's rate, and of 9·9 on the seven years' average rate. Ulcers, boils, and eczema caused more than half the admissions.

*Injuries.*—The number of admissions under this heading is 129, being about the same as in the previous year. It includes 12 cases of fracture, 1 of

*China.* dislocation, and 2 of heat stroke, the last named being both fatal. The ratio, 91·2, is below that of last year by 5·0, but above the 7 years' average rate by 4·6.

*Invaliding.*—The number of invalids sent home during the year was 25, giving a ratio of 17·68 per 1,000 as compared with 8·68 in the previous year, and 25·06 the decennial average rate. 13 men, or 22·71 per 1,000, were between 20 and 25 years of age, 11, or 15·89, were between 25 and 30 years, and 1, or 44·00, was under 20 years of age. As to service 16 men were between 1 and 2 years, giving a ratio of 18·00 per 1,000, 6 were between 2 and 3 years, or 31·74 per 1,000, and 3, or 31·91 per 1,000, had over 3 years' service. The causes were chiefly malarial fevers, mental disorders, circulatory, and tubercular diseases.

The number of men finally discharged as medically unfit for further service was 14, equal to a ratio of 9·90, lower than the rate for 1892 by 4·11.

The principal disabilities necessitating final discharge were 4 for nervous diseases, including 3 for mental disorders, 3 for circulatory diseases, 2 for tubercle of lung, and one each for malarial fever, debility, rheumatism, diseases of digestion, and local injuries.

*Officers.*—The average strength of officers during the year was 71, and the number of admissions 52, with a ratio of 718·3, being a decrease of 175·6 per 1,000 on the rate for 1892. The chief causes of admissions were fevers, of which there were 13, exactly the same number as in 1892. Diseases of the digestive system were next in order of frequency; for these there were 12 admissions. There were no deaths.

*Women.*—There were 52 admissions as compared with 51 in the previous year. The ratio, 963·0 per 1,000, shows an increase of 18·6 on the rate for last year. Fevers and debility furnished the greater number of admissions. There were 3 deaths, caused by dysentery, purpura, and peritonitis respectively.

*Children.*—The average strength was 92, and the number of admissions 95, against 83 in previous year. The ratio, 1032·6 per 1,000, shows an increase of 100·0 on that for 1892. Whooping cough, diarrhoea, fever, and bronchial affections furnished the greater bulk of admissions. There was 1 case of small-pox, of a very mild modified type, in a child bearing good marks of vaccination. She was immediately sent with her mother to the Colonial Hospital Ship "Hygeia," and no further cases occurred. There were 7 deaths, as compared with 2 in the previous year. Of these 3 were caused by, or attributable to teething, 1 to remittent fever, 1 to debility, 1 to inflammation of stomach, and 1 to membranous croup. For the relief of the latter tracheotomy was performed. Considerable relief followed the operation, but the child subsequently died.

*Sanitary Conditions.*—The Principal Medical Officer, Surgeon Colonel A. F. Preston, M.B., reports that the following sanitary improvements have been made during the year:—

Hospital Ship "Meeanee."—Water laid on to the quarters of the resident medical officer, wardmaster and ship keeper. Soiled linen store provided. Four waterclosets renewed.

Murray Barracks.—Kitchen provided for sergeants' mess.

North Barracks.—Officers' latrine and urinal provided.

Wellington Barracks.—Children's latrine provided. Soil pipes of six waterclosets altered.

Queen's Road Barracks.—Chinese latrine provided in "A" and "B" blocks.

Sanitarium.—Water laid on from Colonial main. New verandah on south side.

Head Quarter House.—Drain laid from stables, and house drains diverted from storm water drain.

Iyemoo.—Casemates' ventilation improved.

Victoria, Fly Point and Kowloon, E Batteries.—Matshed guard-rooms provided.

Gun Club Hill, Camp Kowloon.—Two small patches of marshy ground in vicinity of camp have been drained. Latrine and ablution room altered and improved. Drain from cook-house to refuse-pit constructed.

Station Hospital, Kowloon.—Matshed for 15 beds erected. Latrine altered so as to suit habits of Asiatics.

Owing to the prevalence of malarial fever amongst the men of the Det. Shropshire Light Infantry at Kowloon, due, it was thought, in a great degree

to the disturbance of the disintegrated granite soil, it was recommended that the construction of the rifle butts, on which the men were employed, should be suspended. This was attended with satisfactory results. *China.*

The condition of the station hospital continues unsatisfactory, it being of a very scattered nature, part being afloat, and part in different barrack rooms on shore. Want of suitable accommodation for infectious cases has been much felt.

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## II.—ASIATIC TROOPS.

The troops consisted of the Hong Kong Companies, Royal Artillery, average strength 429, the Chinese Company, Submarine Miners, Royal Engineers, average annual strength 50, and the Hong Kong Regiment with an average strength of 825. The total average strength was 1,304, and there were 912 admissions into hospital, or 699·2 per 1,000, 17 deaths (inclusive of those of 6 men who died while absent from Hong Kong), or 13·04 per 1,000, and 38·18 constantly sick, or 29·28 per 1,000.

Compared with the corresponding rates in the preceding year, there was a decrease of 363·4 in the admission rate, of 2·37 in the death-rate, and of 4·71 in that of constantly sick.

The principal causes of sickness were malarial fevers 162 cases, including 22 of remittent fever, venereal affections 58 cases, diseases of the respiratory and digestive systems 60 and 123 respectively, and skin diseases 192 cases.

The deaths were three from malarial cachexia and three from diarrhoea, two from tubercular diseases and anæmia respectively, and one each from dysentery, remittent fever, beri-beri, rheumatic fever, noma, and epilepsy. There was also one case in which the man died at his home in India, but from what disease is not known.

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## XII.—ON THE HEALTH OF THE TROOPS SERVING IN THE STRAITS SETTLEMENTS.

### *Sickness and Mortality.*

#### I.—WHITE TROOPS.

*Straits  
Settlements.*

The average strength of the force in the Straits Settlements was 1,223. The troops in garrison were the 26th Company, Southern Division, Royal Artillery, the 2nd Battalion, Lincolnshire Regiment, and detachments Royal Engineers, Departmental Corps, and Garrison Staff. The distribution was the Royal Artillery at Fort Canning, Blakan Mati, and outlying forts; five companies of Infantry at Tanglin, and two companies at Penang, also one company at Fort Canning. The Royal Engineers at Pulo Brani, and departmental corps at various stations.

In the following table the principal health statistics of these troops are given:—

1883. Average Strength.	Admissions.	Deaths			Invalids		Average con- stantly Sick.	Ratio per 1,000 of Strength.				
		In the Command.	Of Invalids.	Total.	Sent Home.	Finally Discharged.		Admissions.	Deaths.	Invalids Sent Home.	Invalids finally Discharged.	Constantly Sick.
1,223	1,064	3	1	4	13	7	71.19	870.0	3.27	10.63	5.72	58.21

Compared with the corresponding ratios in the previous year a decrease of 133.3 per 1,000, has occurred in the admission rate, one of 6.34 in the constantly sick rate, and one of 7.52 in the death-rate; in comparison with similar average ratios for the preceding ten years, the ratio of admission has declined by 351.9, the rate of mortality by 3.70, and the rate of constant inefficiency through sickness by 9.89 per 1,000. The average sick time to each soldier was 21.28 days, being shorter than in the previous year by 2.35 days, and than the average period for the previous ten years by 3.58 days. The average duration of each case of sickness was 24.46 days, being longer than in 1892 by .91 of a day, and than the decennial average period by 4.12 days.

The statistics of sickness, mortality, and invaliding, in individual corps will be found in Abstract XL. In the Royal Artillery the admission and constantly sick rates were 970.1 and 61.07 per 1,000 respectively. In the 2nd Battalion, Lincolnshire Regiment, the admission and constantly sick rates were equal to 888.6 and 61.74 per 1,000 respectively. All these rates were lower than those of last year, except the admission rate of the Royal Artillery, which was higher.

Taking the sickness and mortality according to the age of the troops it is found that in those under 20 years of age, the admission rate was 627.9; between 20 and 25 it was 1119.8; between 25 and 30 it was 702.4, and above 30 it was 503.9 per 1,000. Compared with last year's rates all show an increase, with the exception of that for the third period mentioned. There was no mortality in the first two periods, but the rates in the last two were 4.05 and 7.87 per 1,000 both lower than in 1892. With regard to length of service in the Command, the admission rate in those under 1 year's service was 898.0 per 1,000, in the 2nd year 930.4, in the 3rd year 915.4, and over that period 489.3. Compared with last year these rates show a decrease, with one exception, viz., that for men in their 2nd year, which shows an increase of 176.4 per 1,000. The mortality, which occurred in men under 1 year's service, was equal to 3.39 per 1,000, very much below the rate for 1892.

In Abstract XIV. will be found the sickness, mortality, and invaliding arranged according to the different groups and orders of diseases. *Straits Settlements.*

**GENERAL DISEASES.—Diseases dependent on Morbid Poisons.**—There was one case of *small-pox*, and also one of *enteric fever*. Other continued fevers caused 99 admissions, being in the ratio of 81·0 per 1,000, below last year's rate by 31·0, but above the average rate for the previous seven years by 12·7. *Dysentery* caused 6 admissions, or a ratio of 4·9 per 1,000, below the last and the seven years' average rates.

*Malarial Fevers* caused 40 admissions, giving a ratio of 32·7 below last year's rate by 52·7 per 1,000, and also under the average rate of seven years by no less than 107·9. The cases comprised 2 of remittent fever and 38 of ague.

*Venereal Diseases.*—*Primary syphilis* caused 161 admissions, giving a ratio of 131·6 per 1,000, being 12·8 less than last year. Including simple venereal ulcer the admission rate for primary venereal sores equalled 147·1, lower than last year's rate by 13·5, and than the seven years' average rate by 39·9. The constantly sick rate equalled 12·46, a decrease of 1·49 in the rate for 1892, and of 2·84 on the average for the previous seven years. *Secondary syphilis* was the cause of 137 admissions, with a ratio of 112·0, and a constantly sick rate of 11·81 per 1,000. Both these rates show an increase on last year of 20·7 and ·98 per 1,000 respectively. Compared with the seven years' average rates there is also an increase. *Gonorrhœa*.—There were 119 admissions for this disease, giving a ratio of 97·3. Compared with last year there is a decrease of 20·5, and in comparison with the seven years' average rate one of 56·2 per 1,000. The constantly sick rates also show a decrease. Including all forms of venereal disease the total admission rate equalled 356·4 and the constantly sick rate 31·43 per 1,000. Compared with 1892 there is a decrease in both rates, of 13·3 and 1·85 per 1,000, and compared with the seven years' average rates one of 73·4 and 4·90 respectively.

*Parasitic Diseases* caused 4 admissions, and *alcoholism* 7.

*Debility* was the cause of 27 admissions, being in the ratio of 22·1 per 1,000, an increase on the previous year's rate of 6·3, and above the average rate of seven years.

*Rheumatism* caused only 11 admissions, comparing favourably with last year.

*Tubercular Diseases* gave 2 admissions and 2 deaths, including that of an invalid after leaving the Command. All the cases were due to tubercle of lung.

**LOCAL DISEASES.**—*Diseases of the Nervous System* caused 21 admissions, or a ratio of 17·2 per 1,000, higher than last year's rate by 3·8, and than the average rate for seven years by 10·6. Three of the cases were due to mental affections.

*Diseases of the Digestive System* were the cause of 75 admissions with a ratio of 61·3 per 1,000, lower than the rate for 1892 by 33·3 and than the seven years' average rate by 17·9 per 1,000. The principal causes of admission were dyspepsia, diarrhœa, and sore throat.

*Diseases of the Connective Tissue* caused 51 admissions, giving a ratio of 41·7, an increase of 10·2 on the rate for 1892, and one of 7·8 per 1,000 as compared with the seven years' average rate.

*Diseases of the Skin* gave 67 admissions, or a rate of 34·8, compared with 40·7 in 1892 and 80·0 per 1,000, the average rate for the preceding seven years.

None of the other systems call for special comment.

*Injuries* were the cause of 102 admissions, equal to a ratio of 83·4 per 1,000. Compared with 1892 there is an increase of 2·9, but in comparison with the seven years' average rate there is a decline of 22·0 per 1,000. The causes of admission were chiefly wounds, contusions, and sprains. There were two deaths, due to asphyxia by submersion.

*Invaliding.*—The number of men invalided home during the year was 13, or a ratio of 10·63, lower than in 1892 by 9·29, and than the rate for the previous ten years by 12·11 per 1,000. The rate of invaliding in the Royal Artillery was 12·82, and in the Infantry 10·33 per 1,000. With regard to age none were invalided under 20 years. From 20 to 25 years 9, or 16·10 per

*Straits Settlements.* 1,000, were invalided; from 25 to 30 years 3, or 6·07; and from 30 upwards 1, or 7·87 per 1,000. As to length of service in the Command 9, or 10·18, were under 1 year's service, and 4, or 30·76 per 1,000, had between 2 and 3 years' service. The causes of invaliding were—secondary syphilis 3 cases, debility 3, nervous diseases (including 2 mental) 3, diseases of circulatory system 2, and tubercular diseases and diseases of the organs of locomotion 1 case each.

The number of men discharged during the year as medically unfit for further service was 7, or 5·72 per 1,000, lower than last year's rate by 4·24. The disabilities necessitating final discharge were tubercular diseases, mental diseases, and diseases of the circulatory system, two cases each, and skin diseases one case.

*Officers.*—The average strength was 55, and the admissions 32, being in the ratio of 581·8 per 1,000, a decrease on last year's rate of 126·5. There were no deaths. The chief cause of sickness was simple continued fever.

*Women.*—The average strength was 58, and there were 20 admissions but no deaths. The admission ratio, 344·8 per 1,000, was below the rate for 1892 by 369·5 per 1,000. Four of the admissions were due to debility, 2 to simple continued fever, and 2 to colic.

*Children.*—With a strength of 108 there were 20 admissions and 1 death, giving ratios of 185·2 and 9·25 per 1,000, both below the previous year's rate, by 127·3 and 32·41 respectively. The cases included 3 of measles. The death was due to dysentery.

*Sanitary Conditions.*—The Senior Medical Officer, Brigade Surgeon Lieut.-Col. M. Cogan, reports that the accommodation in barracks and hospital was ample and satisfactory. The ventilation and means of ablution were satisfactory. The doors and windows being kept constantly open affords a thorough change in the air of all buildings. The cooking is on the Indian principle in barracks, but an American stove has been erected at Tanglin Hospital, which is an improvement, and covered passages have been constructed from the married quarters to their respective cookhouses at Tanglin Barracks. The hospital at Tanglin has been re-roofed with new attap. These are the principal changes carried out during the year under review. There has been no change in the quantity or quality of the rations.

All sanitary recommendations regarding the barracks at Blakan Mati and Pulo Brani are under consideration. A non-dieted hospital is much needed at Blakan Mati, as at present the sick are sent a distance of four miles to Fort Canning in all weathers and under all circumstances. There is no gymnasium on either island, the one at Tanglin is regularly attended by the Infantry, and its effect on health is satisfactory. The municipal water has not yet been supplied to Tanglin, the drinking water is procured from shallow wells, and conveyed in wooden buckets, but filtered before being used; this surface well water is liable to pollution, but so far no disease is traceable to its use.

The infectious hospital at Tanglin is under consideration for construction.

The general health of the troops has been in every respect well looked after and most satisfactory.

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## II.—ASIATIC TROOPS.

The troops quartered in the Command during the year were the Singapore Company, Royal Engineers, at Pulo Brani, and Asiatic Artillery at Blakan Mati. The total strength 166, and the admissions 120 with 2 deaths, the ratios being 722·9 and 12·04 per 1,000 respectively, the former slightly higher and the latter much lower than last year's rates. The cases of sickness were principally due to simple continued fever, venereal diseases, and diarrhoea. The deaths were due to diarrhoea and gangrene; the patient in the last named case refused to have a primary operation (for fracture of right arm) performed on him.

The women and children do not require much medical attendance. Their general health was good.

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## XIII.—ON THE HEALTH OF THE TROOPS SERVING IN INDIA.

*Sickness and Mortality.*

The average strength of the warrant officers, non-commissioned officers *India*, and men in India was 69,865; the admissions into hospital were 98,983; and the deaths 919 of which 881 took place in India, and 38 (being those of invalids) on the passage to or after arrival in England. The average number of constantly sick was 6050·05. The rates from these numbers are, for admissions 1416·8, for deaths 13·15, and for constantly sick 86·60 per 1,000 of the strength.

The sickness for each of the three Commands is shown in the following table:—

	Average Annual Strength.	Admitted into Hospital.	Deaths			Invalids sent Home.	Invalids discharged the Service.	Average constantly Sick.
			In India.	Of Invalids.	Total.			
Bengal - -	43,001	63,142	619	21	643	1,121	456	3897·00
Madras - -	13,349	16,449	125	6	131	350	129	1134·79
Bombay - -	13,515	19,392	137	8	145	298	149	1018·26
Total - -	69,865	98,983	881	38	919	1,769	734	6050·05
Ten years, 1883 } -92 - - -	632,069	916,281	9,208	417	9,625	16,140	8,425	43220·00

continued.

	Ratio per 1,000 of Mean Strength.					Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.
	Admitted.	Died.	Invalids sent Home.	Invalids discharged.	Constantly Sick.		
Bengal - -	1468·4	14·95	26·07	10·60	90·63	Days. 33·08	Days. 22·53
Madras - -	1232·2	9·81	23·22	9·66	85·01	31·03	25·18
Bombay - -	1434·8	10·73	22·04	11·02	75·34	27·50	19·17
Total - -	1416·8	13·15	25·32	10·51	86·60	31·61	22·31
Ten years, 1883 } -92 - - -	1448·3	15·21	25·51	13·32	76·22	27·82	19·21

## I.—BENGAL.

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The average strength of the troops serving in the Command during the year was 43,001 warrant officers, non-commissioned officers and men, being slightly higher than the strength in the preceding year.

In the following table are given the more important statistics of sickness and mortality among the troops during the year:—

1893. Average Strength.	Admissions.	Deaths			Invalids		Average con- stantly Sick.	Ratios per 1,000 of Strength.				
		In the Command.	Of Invalids.	Total.	Sent Home.	Finally discharged.		Admissions.	Deaths.	Invalids sent Home.	Invalids finally dis- charged.	Constantly Sick.
43,001	63,142	619	24	643	1,121	456	3897·00	1468·4	14·95	26·07	10·60	90·63

Compared with the corresponding ratios of 1892, it is observed that there has been a decline of 110·7 per 1,000 in the admission rate and one of 5·21 in that of mortality, while the ratio of constantly sick shows an increase of 3·87. Compared with the average ratios for the preceding ten years, the ratios of admissions and mortality also show a fall of 46·0 and ·69 respectively, that of constantly sick being 13·09 higher. The average sick time to each soldier was 33·08 days, which is longer by 1·35 than in the previous year and by 4·78 days than the average period for the preceding ten years. The average duration of each case of sickness, 22·53 days, was also higher by 2·42 and 3·84 days than that of 1892 and the decennial average respectively.

The total loss to the Command by deaths and invaliding to England was 1,740 warrant officers, non-commissioned officers and men, being equal to a ratio of 40·47 per 1,000 of strength, or 1·77 lower than in the previous year, and the loss to the army by death and final discharge as medically unfit for further service among troops in the Bengal Presidency was 1,099, equal to 25·55 per 1,000, a decrease of 6·77 as compared with the corresponding rate for the previous year.

The more important of the statistics of sickness and mortality in the several military districts of the Command are given in Abstract XVI., from which it will be seen that the highest admission rate, 2138·7, occurred in the Quetta district, the next being, 1951·0, in the Lahore, and 1836·1 in the Allahabad districts. These were the only districts having higher admission rates than in the previous year, the Quetta district showing the notable increase of 615·0 per 1,000, due to the excessive prevalence of malarial fevers. The lowest admission ratio was 1108·1 per 1,000 in the Sirhind district, which was lowest also in the preceding year. Excepting the three above referred to, all the districts had lower admission rates than in the year before, the decreases ranging from 59·4 in Rohilkhand to 451·7 in Bundelkhand. The highest ratio of mortality was 27·62 per 1,000 in the Peshawar district, against 36·79, the highest in the previous year. This is followed by 21·45 in the Quetta district, as compared with 9·95, the lowest in 1892; and by 19·32 in the Lahore district, against 26·79, the second highest in the preceding year. Of the 75 deaths recorded in the Peshawar district, 34 were due to enteric fever and 19 to malarial fevers. The high death rate in the Quetta district is attributable to diseases of the respiratory system, and that of the Lahore district to enteric fever and diseases of the respiratory and digestive systems. The lowest mortality ratios were 7·96 in the Rohilkhand district, 9·20 in that of Allahabad, and 9·80 in that of Oudh. All the districts, excepting Quetta and

Presidency, had lower ratios of mortality, Rohilkhand showing a decrease of *Bengal*. 12·60, Peshawar of 9·17, and Oudh of 8·17.

Abstract XVII. shows the statistics of the sickness and mortality at the different stations in the Command.

Taking first the stations in the plains having an average annual strength exceeding 150 men, it is found that, as in the preceding year, the highest admission ratio occurred at Amritsar. This was as high as 3500·0 per 1,000, giving an excess of as much as 917·6 and of 1154·4 over the ratios of the previous year and the decennial average respectively. Benares, which comes next with 2628·9, also shows the large increase of 628·9 and 1044·8 in the two comparisons; while Mian Mir, although third highest with a ratio of 2185·4, shows a decline of 129·6 and 251·2 respectively. Quetta, which comes fourth, had an admission rate of 2138·7, exceeding that of 1892 by 615·0, and the ten years' average rate by 742·8 per 1,000. The lowest ratio for admissions, 976·9, is again shown by Roorkee, the next above being Cawnpore with 1081·8, and Fort William with 1085·3. Of the 34 stations included in the above comparison (the station of Muttra having been occupied for only a short period during the year) nine had higher admission rates than in the preceding year, the most marked increases besides those mentioned being that at Jullundur, one of 565·1, and that at Sitapur of 228·0 per 1,000. Of the decreased ratios the most important were a fall of 906·0 at Nowgong, of 761·2 at Cawnpore, of 672·7 at Campbellpore, of 630·4 at Sialkot, and of 505·8 at Delhi. Compared with the average ratios for the preceding ten years, 14 stations had higher admission ratios, the most notable of which have been already mentioned; to those may be added Nowshera, showing an increase of 491·8, and Jullundur one of 350·7. Of the 20 stations in which there has been a decline in this respect, the following only need be named:—Delhi, showing a decrease of 944·5, Roorkee, one of 613·7, Jhansi of 592·5, and Cawnpore of 437·3. The ratio of mortality was highest at Jullundur, 29·99, against 4·61 in the previous year, and 15·30, the decennial average rate; the next in order being 27·78 at Dum-Dum, against 14·87 and 12·61 respectively in the two comparisons; and 27·51 at Peshawar as compared with 56·71, the highest the year before, and 19·87, the decennial average rate. Mortality was lowest in Fort William, the ratio being 4·27, against 7·11 and 12·95 respectively in the previous year and the decennial average. Fatehgarh comes next above with 4·57, as compared with 13·45 and 18·16; followed by Nowgong with 5·54, against 4·42 and 12·08; and Sitapur with 5·95, against 15·95 and 13·72 in the two comparisons. Of the 13 stations having ratios exceeding those of the preceding year, Quetta and Fort Allahabad may be mentioned in addition to Jullundur and Dum-Dum previously referred to; the mortality ratios of these two stations having been 21·45 and 14·78 respectively, or more than double those of 1892. The ratios of 21 stations compare favourably with those of the preceding year, the decreases varying from 1·01 at Barrackpore to 29·20 at Peshawar, the most important intermediate ones being Ferozepore and Delhi, the ratios of which, 14·26 and 12·66 respectively, were barely a third of those of the preceding year, and Bareilly, where the ratio, 6·67, was less than a fourth. Compared with the decennial averages, the ratios at 13 stations are found to be higher and those at 21 lower. Of the former, Dum-Dum shows an increase of 15·17, Jullundur of 14·69, and Quetta of 10·01; and of the latter, Fatehgarh with a decline of 13·59, Allahabad of 13·57, Dinapore of 13·28, and Benares of 13·14, only need be mentioned.

Taking next the seven hill or convalescent depôts, Dalhousie is again found to have the highest ratio of admissions, 1761·5, and shows, moreover, an increase of 418·9 over the previous year's ratio, and of 306·0 over the ten years' average rate. Landour comes next with 1484·3, an excess of 566·1 compared with the previous year, but a decline of 150·4 from the average; and Murree third with 1462·6, an increase of 239·7 and 51·6 in the two comparisons. Except Pachmarhi—which shows an increase of 67·0 over the previous year's ratio, but a notable decline of 457·3 from the average—the remaining stations had lower admission rates than in the preceding year, Naini Tal giving a material decrease of 439·5 and of 880·7 per 1,000, as compared with the decennial

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average rate. The mortality ratio was highest at Murree, 37·38 per 1,000; this was, however, 14·05 below that of the year before, but 4·24 above the average. The second highest occurred at Dalhousie, 23·60, and exceeded the ratios of the two periods above mentioned by 10·42 and 10·99 respectively. This was the only station which had a higher ratio than that of 1892, all the others comparing favourably therewith, Landour having a ratio of 6·29 against 18·87, Pachmarhi one of 9·09 against 80·36, and Kasauli one of 13·37 against 40·12. As in preceding years, Darjeeling, Dalhousie, and Pachmarhi were also garrisoned by a proportion of healthy men.

Comparing now the principal hill stations occupied by healthy troops having an average annual strength exceeding 150 men, the highest ratio of admissions is found at Cherat, 1224·1; the next being Chakrata with 1206·9. The lowest occurred at Solon, 855·2, and the next above at Camp Thobba, 959·9. Of the 11 stations (against 12 in the previous year) included in this comparison the admission rates at four were higher than in 1892, Camp Gharial giving an increase of 434·9, Kuldana one of 312·9, Chakrata of 254·4, and Cherat of 235·6 per 1,000. The principal decreases were 331·1 per 1,000 at Chaubattia, 127·8 at Subathu, and 124·5 at Ranikhet. The ratios at all the stations, however (except that at Camp Gharial, which shows an excess of 284·9), compare favourably with the average of the preceding ten years, the most important decreases being those at Camp Thobba, 394·8; Chaubattia, 379·8; Subathu, 256·4; and Jutogh, 240·2. Cherat furnishes also the highest ratio of mortality, 40·17, as compared with 8·22 for the year before and 15·11, the decennial average. Camp Thobba comes second with a death rate of 20·04, against 6·06 and 6·86 in the two comparisons. The lowest was 3·22 at Chaubattia, against 14·98 and 14·52, followed by 3·68 at Camp Gharial as, compared with 19·11 and 12·66, the ratios of the preceding year and the decennial average respectively. Four stations had increased ratios, Cherat and Thobba, named above, Solon, the ratio of which was nearly, and Kuldana; the ratio of which was rather more than double that of the year before. The ratios at Ranikhet and Chakrata were less than half, and that of Jutogh rather more than a fourth of the preceding year's ratios. Compared with the ten years' average the ratios at six stations were higher and those at five lower, the most important of these have already been mentioned. To these may be added Solon and Kuldana, the ratios at which were more than double the average.

In Abstract XLI. will be found the more important of the statistics of sickness and mortality of the different arms of the service as well as of the individual corps which served in the Command during the year.

The average strength of the cavalry was 3,203, and there were 4,366 admissions into hospital and 69 deaths, while the average number constantly sick amounted to 279·17 men. The ratio of the admissions was therefore 1363·1, that of mortality 21·54, and that of constantly sick 87·16 per 1,000 of strength. Compared with the corresponding figures of the preceding year, the admission rate was less by 182·4, but the death and constantly sick rates were greater by 2·32 and 4·62 per 1,000 respectively. The average sick time to each soldier was 31·81 days, and the average duration of each case 23·34 days, both being longer than in the preceding year by 1·60 and 3·79 days respectively.

The average strength of the artillery was 6,758, and there were 10,049 admissions into hospital, 107 deaths, and an average of 559·69 men constantly sick, being respectively in the ratios of 1487·0, 15·83, and 82·82 per 1,000 of strength. These compare favourably with the ratios of the previous year, being lower by 188·3, 3·72, and 2·62 severally. The average sick time per man, 30·23 days, was also shorter by 1·04, but the average duration of each case, 20·33 days, was greater by 1·66 days.

The infantry had an average strength of 31,483, the admissions into hospital amounted to 47,519, the number of deaths to 411, and the average number constantly sick to 2919·89 men. The equivalent ratios were 1509·4 for admissions, 13·05 for mortality, and 92·74 for constantly sick; the two first being lower by 86·1 and 5·95 per 1,000 respectively, and the last 5·39 per 1,000 greater than the corresponding ratios in the previous year. The average sick time to each soldier was 33·85, and the average duration of each case 22·43 days, both being longer by 1·88 and 2·39 days than in the year before.

The subjoined table exhibits the influence of age on the sickness, mortality, Bengal, and invaliding of the year:—

Age.	Average Strength.	Admissions.	Deaths.	Invaliding.	Ratios per 1,000 of Strength.		
					Admissions.	Deaths.	Invaliding.
Under 20 years - -	1,216	1,172	13	6	940·6	10·43	4·83
From 20 to 25 years -	21,127	40,231	367	649	1904·2	17·37	30·72
„ 25 „ 30 „ -	15,539	18,782	176	367	1208·7	11·33	23·62
„ 30 „ 35 „ -	3,698	2,301	48	53	623·9	13·02	14·37
„ 35 „ 40 „ -	1,075	467	10	38	454·4	9·30	35·35
40 years and upwards -	232	134	5	8	577·6	21·55	34·48
Not stated - - -	94	55	—	—	—	—	—
Total - - -	43,001	63,142	619	1,121	1468·4	14·40	26·07

As usual the highest ratio of admissions is found among men between the ages of 20 and 25 years; that of men between 35 and 40 years being lowest. The sequence of the ratios differed only from that of the previous year in that men of 25 to 30 years and those under 20 years of age were second and third instead of third and second. The ratios were lower than the corresponding ones of the preceding year under all classes, that of men under 20 years showing a material decrease of 466·9, and that of men of 35 to 40 years an important one of 288·9 per 1,000. The ratios of mortality also for all the classes compare favourably with those of 1892, that of men of 40 years of age and over, which was the highest, being only about half, and that of men in the preceding quinquennial period, which was the lowest, considerably below half the corresponding ratios in the preceding year.

The influence of length of service in the country on the sickness and mortality is shown in the following table:—

Length of Service in the Country.	Average Strength.	Admissions.	Deaths.	Invaliding.	Ratios per 1,000 of Strength.		
					Admissions.	Deaths.	Invaliding.
Under 1 year - -	7,316	12,407	182	131	1708·2	24·88	17·91
From 1 to 2 years -	8,491	14,038	108	244	1653·3	12·72	29·74
„ 2 „ 3 „ -	6,670	11,736	91	239	1759·5	13·64	35·83
„ 3 „ 4 „ -	6,576	9,954	75	176	1513·7	11·41	26·76
„ 4 „ 5 „ -	5,455	6,377	59	120	1169·0	10·82	22·00
„ 5 „ 10 „ -	7,174	7,770	94	175	1083·1	13·10	24·39
10 years and upwards -	1,226	715	10	36	583·2	8·16	29·36
Not stated - - -	93	55	—	—	—	—	—
Total - - -	43,001	63,142	619	1,121	1468·4	14·40	26·07

It will be seen that the admission rate was highest among men in their third year of Indian service, that of men in the first and second years coming next in order, followed in regular sequence by men in the subsequent periods of service. This varied considerably from the order of these ratios in the preceding year when men in the second year of Indian service stood first, those in the third year second, and those in the first year's service third, the order of the subsequent periods also differing somewhat. Compared with the corresponding ratios of 1892, those for men in their first and fourth year's



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service are found to be higher, that for the former by 187·1; all the others being lower, that of men in their second year's service by as much as 387·3, that of men between 5 and 10 years' service by 373·8, and that of men over 10 years' service by 252·5 per 1,000. The sequence of the ratios of mortality also differs considerably from that of the previous year, the men in their first year's service, who then stood third, being now highest; the third year men, who were fifth, being second; men of 5 to 10 years' service, who stood fourth, being third. The second year men, who were highest the year before, now come fourth; while men of 10 years' service and over, who stood second, have the lowest ratio in the present year. Only two of the periods show ratios higher than those of the preceding year, viz., the first and fifth, the former giving an increase of 2·37. The principal decreases occurred among men of 10 years and over, 15·98, and men of 1 to 2 years' service, 12·89.

Abstract XV. gives a table exhibiting the sickness, mortality, invaliding, &c., under the several groups and orders of disease; and Abstract XVI. the sickness and mortality from the same in the respective military districts of the Command.

**GENERAL DISEASES.—Diseases dependent on Morbid Poisons.—Eruptive Fevers** caused 26 admissions into hospital, of which 13 or half were for small-pox, with 2 deaths, the remainder being 7 cases of measles, 2 of cow-pox, 2 of chicken-pox, and 2 of scarlet fever (both at Chakrata). The ratio of admissions for small-pox was ·3, against ·2 in the preceding year, and ·9, the average ratio in the preceding seven years; that of mortality ·05 against no deaths in 1892, and ·08 the average rate. The cases occurred at Rawalpindi, 7 with one death, Bareilly, 2, and Solon, Sialkot, Peshawar, and troops on the march, one each respectively, the second death being the termination of a case remaining at the end of the previous year at Ferozepore.

**Enteric Fever.**—The admissions for enteric fever numbered 1,076, and the deaths 276, the average number constantly sick being 164·30. The equivalent ratios were 25·0, 6·42, and 3·82 per 1,000 respectively, which, compared with the corresponding figures of the previous year give a decrease of 1·8 of admissions, and one of ·33 of constantly sick, but an increase of ·02 for deaths. They were all higher, however, than the septennial average rates by 3·3, ·71, and ·71 per 1,000 for admissions, mortality, and constantly sick respectively. The per-centage of mortality to attacks was 25·6, against 23·9 in 1892, and 26·3, the average of the previous seven years. Abstract XVIII. contains a statement showing the occurrence of this disease at each station and in each quarter of the year. As in preceding years, the second quarter had the largest number of cases and deaths, followed in order by the third, fourth, and first quarters, which was also the sequence of the several quarters in respect to the per-centage of mortality to attacks, the highest, 28·6, having occurred in the second, 25·7 and 21·3, in the two succeeding ones, and 20·5, in the first. This differed from the order observed the year before, when the highest per-centage was in the first quarter, the second, fourth, and third quarters following. Seven stations excepted (seven also in the previous year), the disease occurred to some extent in every district and station in the Command. The exceptions were Darjeeling, Gnathong, Fatehgarh, Moradabad, Pachmarhi, Fort Attock, and Khrya Gali. The highest ratio of admissions was 39·2 in the Bundelkhand District, which was an increase of 11·5 per 1,000 on its preceding year's ratio; the next was 37·9 in Sirhind, which in the preceding year was highest with 51·1, and therefore now presents a decline of 13·2; the third, Rawalpindi with 31·1, being an increase of 2·2. The Quetta District, which in the previous year had the high admission rate of 30·8, this year stands lowest with a ratio of only 8·1; the Presidency District, which for several years past stood lowest in this respect, comes next above with 8·5, an increase of 3·4. Of the remaining districts the ratio of Peshawar, 28·0 per 1,000, was more than double that of 1892, while Narbudda, which had the second highest last year, 46·8, shows a fall of 18·3, and Rohilkhand one of 10·2. The highest ratio of mortality, 12·52, is found in the Peshawar District, against 5·40 the year before. This is closely followed by 12·47 in Bundelkhand, an increase of 2·83, the third being 9·64 in Sirhind, an increase of 1·00 per 1,000. The lowest ratio, 2·00 per 1,000, happened in the Allahabad District, a decrease of 1·35 from the previous year; and the next above, 2·38, in the Quetta District, a

decrease of 1·24. Rohilkhand, which had the highest ratio in 1892, and Narbudda, which stood third, now show the notably diminished death rates of 4·46 and 3·85, both being considerably less than half the ratios of the previous year. The station at which the greatest number of cases occurred was Rawalpindi, where among the men there were 94 with 29 deaths. The average monthly strength of the men and the admissions by months were:—

	Strength.	Admissions.
January - - - - -	5,268	3
February - - - - -	4,696	1
March - - - - -	4,739	5
April - - - - -	4,198	2
May - - - - -	1,594	14
June - - - - -	1,440	21
July - - - - -	1,443	15
August - - - - -	1,437	13
September - - - - -	1,455	8
October - - - - -	1,533	4
November - - - - -	3,691	4
December - - - - -	4,470	4

The average strength by periods of service in the Command and the cases therefrom were:—

	Average Strength.	Admissions.
Under 1 year - - - - -	677	54
1 and less than 2 - - - - -	398	11
2 „ „ 3 - - - - -	636	11
3 „ „ 4 - - - - -	283	6
4 „ „ 5 - - - - -	218	4
5 „ „ 10 - - - - -	666	8
Above 10 - - - - -	85	0

The average strength and number of cases by age periods were:—

	Average Strength.	Cases.
Under 20 years - - - - -	44	0
20 to 25 years - - - - -	1,335	76
25 „ 30 „ - - - - -	1,266	15
30 „ 35 „ - - - - -	272	2
35 „ 40 „ - - - - -	68	0

*Bengal* The average strength monthly of men of under one year's service in India and the cases therefrom were :—

—	Strength.	Cases.
January - - - - -	1,591	1
February - - - - -	1,892	0
March - - - - -	1,397	4
April - - - - -	997	1
May - - - - -	114	10
June - - - - -	111	12
July - - - - -	111	9
August - - - - -	111	4
September - - - - -	111	7
October - - - - -	113	2
November - - - - -	1,204	3
December - - - - -	871	1

This table shows that from an average strength of 111·8 men of under one year's service in India present during May, June, July, August, September, and October there were 44 admissions for enteric fever. During these months the average strength and number of admissions of such men in the 2nd Dragoon Guards and the 1st Battalion Devonshire Regiment were :—

—	Strength.	Admissions.
2nd Dragoon Guards - - -	38	19
1st Battalion Devonshire Regiment - -	32	18

In these two corps the average annual strengths by periods of service in India were :—

—	Under 1 year.	1 and less than 2.	2 and less than 3.	3 and less than 4.	4 and less than 5.	5 and less than 10.	Over 10.
2nd Dragoon Guards	106	103	71	61	37	95	4
1st Battalion Devonshire Regiment.	287	1	90	136	90	83	2

It will be seen from the above table that the strength of the recent arrivals was less in the 2nd Dragoon Guards than in the Devonshire Regiment, therefore, recent arrival cannot account for the greater number of cases in the former than in the latter corps (42 as compared with 28). The greater prevalence in the 2nd Dragoon Guards cannot be ascribed to youth either, as the average strength of young men was much greater in the Devonshire Regiment, particularly during the months in which the disease was prevalent. In each corps there were 22 cases in men of under one year's service in India, and it therefore follows that in the 2nd Dragoon Guards there were many more cases among non-recent arrivals than in the Devonshire Regiment, for this fact no explanation has been discovered. The 2nd Dragoon Guards arrived from Sialkot in February 1893, and the Devonshire Regiment arrived from Egypt in January, and in Rawalpindi in February 1893, a draft of 400 men of the 2nd Battalion having previously arrived from Burmah. At Meerut there were

81 cases, with 19 deaths, as compared with 41 and 11 deaths in 1892. The *Bengal*. admissions by months were as follows :—

April	-	-	-	-	-	-	2
May	-	-	-	-	-	-	23
June	-	-	-	-	-	-	14
July	-	-	-	-	-	-	2
August	-	-	-	-	-	-	4
September	-	-	-	-	-	-	2
October	-	-	-	-	-	-	5
November	-	-	-	-	-	-	16
December	-	-	-	-	-	-	13

Admissions by corps :—

5th Dragoon Guards	-	-	-	-	-	17
5th Lancers	-	-	-	-	-	18
Royal Artillery	-	-	-	-	-	12
1st Duke of Cornwall's Light Infantry	-	-	-	-	-	1
1st Royal West Kent Regiment	-	-	-	-	-	33

As regards the men, 26 of the 38 cases in May and June were in men of the Royal West Kent Regiment, which had arrived from Chakrata on 29th December 1892, and in India in January of that year, and was therefore serving for the first time during the hot season in a station in the plains. Of the 31 cases in October, November, and December, 22 were in men of the 5th Dragoon Guards, which regiment arrived in India on 2nd, and at Meerut on 12th October 1893, and 11 were in men of the 5th Lancers, 3 being in recruits just arrived from England. The medical officer writes :—" I will repeat here the remarks I made in my last annual report, because the opinion therein expressed grows upon me every year. As to the cause of enteric fever in India it is as obscure as ever. From what I have seen during my last tour of service in this country, which commenced on 2nd January 1890, I am induced to think that a fever of a prolonged nature, having as its pathognomonic sign, ulceration of the ileum, can be caused without a specific excitant; in fact, that youth, indiscretion, undigested food, undue exposure to heat, and to fatigue are factors, enough in themselves to produce in many people a fever the nature of which is such that 25 per cent. of the patients die. Eliminate the five causes mentioned above, and I am much inclined to think that with them would go nearly all the cases of that disease which we call enteric fever." He now adds, " I do not, however, deny the existence of a specific agency in some cases." With reference to the treatment of the disease and the result of the plan recommended by Doctor Burney Yeo, he writes : " It is remarkable that the rate of mortality of the first 45 cases was three times that of the last 45; and this proportion, happens to be the same in the cases treated between 1st January and 30th June as compared with those treated from 1st July to 31st December. It is to be particularly noticed here that the treatment of the enteric fever cases by Burney Yeo's chlorine gas and quinine method commenced on the 2nd July and has been continued ever since, so that by the adoption of the same the mortality seems to have been reduced to a third." This deduction, writes the Principal Medical Officer, is scarcely warranted, as the medical officer appears to have overlooked the fact that a fair comparison between the result of treatment of cases of enteric fever in the months of May and June and November and December cannot be made, as, owing to the extreme heat of the former months, the mortality is then increased under any plan of treatment. All the cases in the first half of the year occurred in the hot months of the period, whereas in the latter half a large majority of the cases were admitted during the cool months.

At Umballa there were 78 cases with 23 deaths among the men, as compared with 42 and 9 in 1892. Monthly the admissions were in March, 1; April, 5; May, 19; June, 8; July, 4; August, 6; September, 13; October, 5;

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November, 7; December, 10. 37 cases were in men of under 21 years of age, and 41 in men of under one year's service in India.

The medical officer writes: "In former years the causation of enteric at Umballa would appear to have been ascribed to impure water, contaminated milk, or bazar supplies. From these views of my predecessors I am reluctantly compelled to dissent, as in later years an improved and excellent water supply has been provided, dairies under regimental European supervision for the supply of milk and butter to the men and families have been established, and the bazar supplies are under the supervision of a specially appointed sanitary officer for the cantonment. Especial attention has been given to the water supply during the past year, and several public reservoirs erected in addition to those previously existing, so that an abundant and pure water supply, both for drinking and ablutionary purposes (seven gallons per head), is afforded even to the native inhabitants of the *Sadr Bazaar*. The water supplied to the cantonment is obtained from wells sunk in the *Tangri* river, pumped into ducts, which convey it to the reservoirs situated all over the station. Now with such a water supply, dairies, &c., one would naturally expect to find a marked diminution in the admissions for enteric fever; but as the reverse is the case, and the number of cases nearly double that of previous years, we are compelled to look to other sources in inquiring into the ætiology of the disease. In Europe the most distinguished sanitary authorities have come to the conclusion that there is a distinction between water-borne enteric and that due to saturation of the subsoil. Now the water supply at Umballa being conveyed in ducts from a source some five miles distant, and not obtained from wells in the station, precludes the possibility of its becoming excretally contaminated or specifically poisoned with the typhoid poison before reaching the consumers, so that subsoil saturation must be considered, if not the actual cause, one of the most important factors in the production of the disease. The excessive rainfall of the past year, spread over the various months, would naturally produce a prolongation of the saturated condition in a cantonment on a perfectly level plain, in which no attempt has ever been made artificially to remove the subsoil water and little attention given even to surface drainage, all reliance being placed on evaporation and the effect of the sun; as a consequence, after the prolonged and heavy rainfalls of the past year, the surface contaminations were washed into the subsoil and remained there to fester under a burning sun until their pestilential emanations, given out as micro-organisms, enter the human body with the air breathed by the young soldier pursuing his daily avocations. This prolonged condition of a saturated subsoil, spread over the various months of the past year, would fully account for the greater prevalence of enteric fever in the station during the year, and for the undue prevalence of the disease for the months in which the protracted rainfall occurred. In fact, the meteorological conditions prevailing throughout the year were most favourable for the production of the disease, and the increased prevalence of enteric shown in the returns would confirm the anticipation formed from the atmospheric changes. Eberth's bacillus is invariably to be found in the excreta of typhoid patients and in cantonments whether deposited by European or native residents, these expelled organisms do not appear capable of reproducing the disease, until they have existed outside the body under circumstances favourable to the development of their original virus. In a dry year these microbes in the excreta do not flourish, but appear to be reduced in vitality by exposure to heat, and are ultimately destroyed; but in a year with abundant rain, such as 1893, the excreta are washed into the subsoil with the much diluted surface sewage, and wherever such filthy water stagnates, both in Europe and Asia, it has been found that bacilli invariably increase, multiply, and furnish a ready medium for the propagation of the disease by emanations carrying germs to food, air, and water. Enteric fever in Umballa can only in rare instances be ascribed to contaminated milk, as from careful inquiries I find that few of the men ever partake of milk, even with their tea, and the almost complete immunity of the women and children from this disease negatives the probability of milk being the vehicle of infection." The Principal Medical Officer is of opinion that comparison of the record of the rainfall in 1893 with that of the average of a series of years does not appear to support

the argument of the medical officer that the increase in the number of cases of *Bengal*. enteric fever in 1892 as compared with previous years was due to an excessive rainfall. The following is the record in inches by months:—

	1893.	Average of several Years.
January - - - - -	4·02	1·19
February - - - - -	3·68	1·05
March - - - - -	·57	·73
April - - - - -	·21	·56
May - - - - -	2·05	·96
June - - - - -	3·63	3·86
July - - - - -	9·83	10·96
August - - - - -	4·14	7·51
September - - - - -	9·54	5·47
October - - - - -	Nil	·61
November - - - - -	·16	·15
December - - - - -	Nil	·48
Total - - - - -	37·33	33·53

From the above figures it will be seen that the fall in 1893 was very little above the average. From the table of admissions by months it will be observed that the greatest number of cases was in May, when the subsoil must have been drier than at other times, very little rain having fallen during the two previous months. The rainfall of that month was certainly above the average, but whereas the majority of the admissions were in the first half of the month, the greater part of the rainfall was in the latter half, the dates on which rain fell and the amount in inches on each day having been—2nd ·1, 6th ·11, 10th ·47, 22nd ·04, 25th ·14, 26th ·22, 27th ·13, 31st ·80. These amounts were so small that they could not have had any effect on the subsoil moisture.

At Lucknow the admissions among the men numbered 73 with 11 deaths; 34 of these admissions were in the last quarter of the year. The District Principal Medical Officer reports: "The cases were distributed pretty uniformly over the whole cantonment up to the end of August, but during September and October the disease assumed almost an epidemic form in the European cavalry barracks. Between 22nd August and 31st December 33 men of the 16th Lancers were attacked, 27 in barracks and 6 on the march shortly after leaving Lucknow. The senior medical officer reports that no cause could be positively traced in any one of the cases. The drinking water was analysed chemically and found good, but that from the filter well from which the 16th Lancers were supplied was reported by Mr. Hankin, the North-West Provinces Government biologist and chemical examiner, to be bad owing to an excess of microbes. The sand of the filter bed, moreover, contained a microbe closely resembling that of typhoid. The use of this well was discontinued, and another well with water pronounced good taken into use. As an additional precaution the drinking water for the regiment was boiled. Mr. Hankin paid two visits to Lucknow, and examined biologically several specimens of earth and water obtained in and about the Lancer barracks. In some water from a nullah (ditch), in the direction of the regimental bazar, he states that he found undoubtedly the microbe of typhoid. In specimens of earth and water taken from this neighbourhood he found microbes resembling that of typhoid. A badly laid drain runs to the north-east of the Lancer barracks, the shortest

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" distance between it and No. 8 Bungalow—which gave the largest number of cases—being 130 yards. This drain conveys the refuse water and urine from the artillery stables to one of the nullahs above described, and is stated to have been offensive at times, and certainly water lodged at parts of it." Mr. Hankin's observations were as follows:—"There is, I think, little reason to doubt that the typhoid microbe had been deposited in the nullah in human dejecta, and it is very possible that this originated the epidemic. During the drying up of the nullah that probably happened repeatedly, both during and after the rains, which this year had been very intermittent, it is probable that the microbe would be carried about by the wind in the form of dust, in this way the outbreak in the barracks may be explained. I do not wish to say that there are not other means by which the microbe might be carried from the nullah to the barracks. It is, I suppose, extremely probable that the dejecta in the nullahs are of native rather than European origin. Natives are supposed to be insusceptible to typhoid, but at any rate they can swallow the microbe and deposit it in their dejecta. Further, it is very likely that the typhoid bacillus can grow and reproduce in their intestines, although it may not give rise to any specific disorder. Traces of human dejecta can be found all through these nullahs, especially in those behind the bazar. It appears to me that this evil would be minimized if the flow of water was either made continuous or altogether prevented. Stagnating puddles ought not to be allowed, and it would be well to disinfect with quicklime those at present existing. Attention should be especially directed to the neighbourhood of the two bridges that carry the roads over the nullahs. Owing to the greater privacy of such positions, natives are fond of going beneath the bridges for the purposes of nature. I noticed the footsteps of cows near puddles in the nullah, and I have no doubt that they drink this water, although I am aware that better water is provided for them. Both in this and in my previous report I have mentioned the existence of microbes allied to that of typhoid. About 20 such species have been discovered by various European savants. They have nearly always been found either in water that was known to be contaminated with typhoid dejecta or that was suspected to be the cause of an outbreak. There is a possibility that some of these microbes are merely degenerated varieties of the typhoid bacillus. However, of this no direct proof has yet been given, and it is not only possible but certain that other of these typhoid resembling microbes are normal inhabitants of the human intestine: consequently, water or other substances containing them should be regarded with suspicion." The District Principal Medical Officer remarks further:—"The milk and butter used by the regiment was obtained from a contractor, the cows milked in the presence of the regimental police, but the feeding and watering of the animals were not supervised, and the very closest supervision will not prevent native cow-keepers from adding to the milk water derived from any convenient source, however polluted. Although the barracks of British troops are generally well looked after, still it cannot be denied that at Lucknow, as elsewhere in India, insanitary conditions abound. The habits and customs of the lower classes of natives with whom the British soldier is chiefly brought in contact are filthy and reckless, and are a constant source of danger. In the 'British Medical Journal' of 27th January 1894 will be found a most interesting and instructive account by Mr. Hankin of bacteriological observations in an Indian dairy, showing how that, in the absence of constant supervision, the most carefully concerted plans are rendered useless." The 16th Lancers were placed under canvas on 1st November and on 22nd of that month were sent on a march, and returned to Lucknow at the end of the year in excellent health and spirits.

At Dagshai enteric fever was again prevalent, the numbers having been cases 54, deaths 9. The admissions by months were, in April 1, May 2, June 12, July 16, August 8, September 9, October 6. 9 of the cases occurred among a draft of 50 men who joined the Argyll and Sutherland Highlanders in January 1893. The prevalence of enteric fever at this station has varied much in different years, and it is instructive to compare it with that at other hill stations. Dagshai and Subathu have existed as stations for British troops for a great number of years, whereas the station of Chakrata was first occupied

in April 1869. The number of admissions yearly at these stations for the past *Benegal*, 20 years has been:—

		Dagshai.	Subathu.	Chakrata.
1874	- - - -	0	0	0
1875	- - - -	1	1	0
1876	- - - -	6	7	0
1877	- - - -	8	17	1
1878	- - - -	18	20	1
1879	- - - -	5	26	1
1880	- - - -	14	2	0
1881	- - - -	1	1	3
1882	- - - -	1	0	1
1883	- - - -	1	22	1
1884	- - - -	7	10	1
1885	- - - -	10	12	0
1886	- - - -	42	4	5
1887	- - - -	8	6	13
1888	- - - -	2	32	15
1889	- - - -	11	20	24
1890	- - - -	8	34	44
1891	- - - -	11	7	23
1892	- - - -	95	41	45
1893	- - - -	54	14	14

From these figures it will be observed that whereas in Dagshai and Subathu enteric fever has during the whole of these years been more or less prevalent, at Chakrata in the early years of its existence as a station there was a marked immunity from the disease. The Principal Medical Officer states that "many medical officers consider that enteric fever is of climatic origin, but the above figures seem to negative climate as a cause. These stations being situated in the hills, and at much the same altitude, are very similar as regards climate, and, therefore, if climate is the cause of the fever it would be expected that they would not differ much as regards the prevalence of the disease. Again, if the fever is of climatic origin it is difficult to understand how at Dagshai there should have been in one year as many as 95 cases, and in another only one or two, or how at Chakrata there should have been for a series of years almost a complete absence of the fever, and then for a series of years a considerable number of cases yearly. As, therefore, at these hill stations the theory of climatic origin appears to be negatived, it is incumbent to look for some other cause, particularly one which will account for the difference as regards prevalence at the individual stations. It has been stated that Dagshai and Subathu have been occupied for a great number of years, whereas Chakrata is a comparatively new station. Now in these hill stations the ground available for the trench system of burial of excreta is very limited, and owing to the rocky nature of the soil it is not considered practicable to cultivate the land in which night soil has been buried. As a result the hill sides have gradually become more and more saturated with sewage. At the old stations of Dagshai and Subathu this saturation of the hill sides with sewage must have existed for a long time, whereas at the new station of Chakrata it is only of comparatively recent date, and at this latter station the enteric fever statistics seem to show that while the hill soil was unpolluted enteric fever was absent, but after night soil had been buried therein for several years the fever commenced to be present. It may be argued that if this pollution of the hills with sewage is the cause of enteric fever, it would be expected that there would not be the variation in the annual prevalence of enteric fever at Dagshai, but the answer to that argument apparently is that, given a polluted soil, it only requires the introduction of the specific poison of typhoid, and its deposit in this polluted soil where it can be propagated, to account for an outbreak of the fever. This theory seems to be much supported by the



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" facts recorded in last year's report, in which it was shown that a regiment which came to Dagshai in 1892 from Umballa brought cases of enteric fever with it, and then suffered severely from the fever at Dagshai itself, as it has again in 1893."

At Sialkot there were 51 cases with 10 deaths among the men. The admissions by months were in February, 1; April, 1; May, 33; June, 10; July, 3; September, 1; October, 1; November, 1. The medical officer reports that in May, when the fever was so prevalent, the water in the wells was very low, and analyses proved it to be of only fair quality.

There were 48 cases among the men at Agra, 14 of whom died. The strengths and admissions by corps were:—9th Field Battery Royal Artillery, 152-3, 24th Southern Division Royal Artillery, 89-3, East Surrey Regiment, 852-42; and by months the admissions were in January, 2; February, 4; April, 3; May, 7; June, 3; July, 5; August, 9; September, 8; October, 5; November, 1; December, 1.

The cases at Cherat numbered 36 and the deaths 13, as compared with 7 and 2 in 1892. The average strength and number of cases among men of under and over one year's service in India were, under one year, 211-22, over, 262-14. By months cases occurred as follows:—In May, 11; June, 3; July, 3; August, 4; September, 13; October, 2.

The medical officer writes:—"The disease was brought up with the troops from the plains. As regards the Nowshera party, this was clearly proved by the fact that one of the soldier's wives from that station arrived suffering from the fever. The first case among the troops from Peshawar reported sick on the 14th May, four days after their arrival. The water drunk by the troops from Peshawar at the first camping ground was afterwards found to be unfit for drinking purposes, but there was no clear evidence that this was the origin of the outbreak among the troops, although it is a reasonable supposition. There was no great number of cases occurring simultaneously, as might have been expected from the ingestion, at the same time by a body of men, of water containing the germs of the disease. The subsequent spread of the disease could not be satisfactorily traced. The aerated waters sold in the bazar were suspected, and the water from which they were made was on one occasion found to be very impure; but this is only one example of the way in which the food of the soldier may be contaminated, handled as it is by native dealers, cook boys, and others whose habits are not of the cleanest. One case is remarkable as occurring in a non-commissioned officer, whose wife had died of the disease a short time before."

At Jullundur there were 33 cases with 12 deaths, the numbers in 1892 having been 4 and 1. The greatest number, viz., 14, occurred in May, the remainder being distributed over 8 months. The medical officer considers that some of the cases returned as simple continued fever were really cases of enteric fever. He remarks: "I am inclined to believe that in the generality of cases in India the disease is contracted in bazars and villages, and away from the lines, but I think it very possible that it also spreads from regimental latrines, which have been contaminated by men suffering from enteric fever in the first stages, and from ambulatory cases of the disease; I can see no reason why a man should not contract enteric fever from using a pan used by one of these cases." He reports that occasionally the stabling accommodation of the cows was in a dirty condition, and that the animals were watered at objectionable tanks in cantonments. That on one occasion a mineral-water machine in the Sadar bazar was found to contain filthy water, and soldiers were believed to occasionally obtain bottles from the owner, although he denied it.

That the conservancy arrangements were well carried out, one exception occurring in the Royal Artillery, which he thinks may have accounted for the first case in that corps.

At Jubbulpore 32 cases with 5 deaths are recorded as compared with 35 and 4 in 1892. Of the admissions 18 were in men of under one year's service in India. The largest number (9) was in April. December being the only month in which there were not any.

At Jhansi the cases numbered 28 and the deaths 11, the numbers in 1892 having been 46 and 14. There were 6 admissions in July, 11 in August, 5 in September, and one each in January, February, March, April, May, and

October. Two promising clues were, it was thought, discovered during the *Bengal* period of prevalence, July—September.

1st. That 5 members of the regimental football team were admitted about the same time; but nothing could be detected to account for this.

2nd. That a fair proportion of the total men attacked had on one or more occasions within a few weeks of their being attacked with the fever attended the voluntary evening service (Wesleyan) at the Railway Institute, near which is a tempting stand-pipe with tap and lock, the water from which was found on analysis to be unfit for drinking purposes; but only one man admitted having drunk water from the tap, while the railway authorities aver that the water supplied to the filters in the building is carefully drawn from a contiguous well of pure water. The medical officer, however, considers that suspicion points very strongly to the tap water as the source of the contagion, as a native water-carrier would undoubtedly, unless very closely watched, fill his water bag from a handy stand-pipe in preference to drawing water out of a well.

At Ranikhet there were 27 cases with 2 deaths, as compared with 19 and 5 in 1892. By months the admissions were, in February, 1; April, 3; June, 16; July, 6; August, 1. The medical officer reports that the 3 cases in April were evidently contracted before arrival at the station. With reference to those in June and July he remarks that in the former month the supply of water for all purposes from the two good springs, which are free from contamination, ran short, and water for ablution purposes had to be obtained from impure sources. Mule carried water-bags were set apart for bringing water for drinking, but it was impossible to prevent the muleteers from sometimes using these bags for bringing impure water, and he considers this is the explanation of these cases. The fever ceased to be present when the two good springs had, in August, abundant water for all purposes.

The cases at Shahjahanpur were 26 with 6 deaths, those in 1892 having been 37 and 2, and in 1891, 5 and 1. The medical officer writes:—"Several cases occurred in men who were in the habit of wandering about the district on shooting excursions," and further, "a noticeable increase of enteric fever occurred immediately after an outbreak of venereal disease." He considers most of the cases were contracted outside cantonments.

At Bareilly there were 26 cases with 4 deaths, as compared with 50 and 19 in 1892, and 56 and 11 in 1891. Monthly, the admissions are recorded, in May, 3; June, 2; August, 3; September, 1; October, 2; November, 3; December, 12. Of those in December, 6 were from the Essex Regiment in men who had arrived from Chauthattia on 9th November, having spent the hot season at that hill station. There was only one case in the Hampshire Regiment, which arrived from Ranikhet about the same time and had marched along the same road.

The cases at Peshawar numbered 24 and the deaths 13, those in 1892 having been 18 and 9. Eight were admitted in June, 4 in July, 6 in August, 3 in September, and one each in May and October. Only two were in men of under one year's service in India.

At Fyzabad 23 men were admitted and 4 died, as compared with 11 and 3 in 1892. The average age of those attacked was 22 years 3 months. Eight had been under one year in India. No cause could be discovered for the cases.

At Allahabad there were 21 cases with 3 deaths, the numbers in 1892 having been 22 and 4, in 1891, 21 and 4, and in 1890, 25 and 10, a remarkable similarity of prevalence. The medical officer reports that the sanitary condition of the lines and the water supply are excellent; he considers that the disease was most probably contracted in the city and bazars.

At Dinapore there were 19 cases with one death, as compared with 10 (one fatal) in 1892. The admissions were scattered over 8 months of the year.

Nineteen cases with 3 deaths are recorded at Campbellpore, where, in 1892, there were 8 and 2. Of the cases, 9 appeared in May, 4 in June, 2 each in August and November, and one each in July and September. 11 were in men of less than one year's service in India.

At Dalhousie there were 18 cases with 6 deaths, the numbers being the same as in 1892. 5 of the cases occurred in men within a month of their arrival at

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the station; they were supposed to have contracted the disease on the march from the plains.

There was a great reduction in the number of cases at Quetta, viz., 17 with 5 deaths, as compared with 68 and 8 in 1892. 5 were admitted in March, 4 in July, 3 in October, 2 in November, and 3 in December. Those in March were all in men of under 3 months' service in India. As they were admitted immediately after the men arrived in the station, the medical officer is of opinion that the disease was contracted prior to their leaving their former station, or on the railway journey.

At Nowshera the numbers were 16 cases with 8 deaths, those in 1892 having been 9 and 5. There was one admission in April; 4 were admitted in May, and 11 in June.

At Ferozepore 14 men were admitted and 5 died. Admissions are recorded in 7 months of the year. Half of the men attacked had arrived in India during the year. At no other station did the number of cases exceed 15. The following extracts from the reports from some of these stations give all the information necessary about them:—

Dum Dum.—11 cases, 8 fatal. The medical officer believes men often drink water out of the tanks and drains in and around cantonments, and thus contract the disease. One man confessed that on several occasions when marker at the range he drank water out of a pool near at hand.

Sitapur.—13 cases with 2 deaths. All were admitted in February and March, and were in men of a draft just arrived from England. The District Principal Medical Officer, who made a personal inquiry regarding the outbreak, is of opinion that most if not all the men contracted the disease during their journey up country.

Chaubattia.—Seven men were attacked and one died. Five of the men belonged to a draft of the Essex Regiment which landed at Bombay on the 18th of March and arrived at Chaubattia on April 15th, having halted at Bareilly for 10 days. These 5 men were admitted as follows:—1 on 17th April and 1 on 2nd, 2 on 7th and 1 on 14th May. The medical officer writes:—"They all felt ill for some days before admission into hospital, so it is tolerably certain that they contracted the disease either at Bareilly or on the march thence to Chaubattia."

Chakrata.—15 cases, 3 fatal. The medical officer remarks:—"It may safely be assumed that in the first 7 cases the disease was contracted out of the station; one man was transferred from the line of march ill with the disease, and the other 6 had been under 24 days in the station before reporting sick. Facts noticed here and in other hill stations tend to prove that the length of incubation in many, if not in most, cases extends considerably beyond that period. A case in point was that of a man who was admitted on 12th May with 'simple venereal ulcer,' and began to develop symptoms of enteric fever on 16th June. During the interval of 34 days his sanitary surroundings in hospital had been to all appearance excellent. The water, milk, and food supplies were generally as free from risk of contamination as they well could be. The patient was admitted into the barrack hospital (where venereal cases are treated), nearly a quarter of a mile from the main building, where there had been previous admissions for enteric fever, and no personal communication was allowed between the patients in these two places. The presumption then is that the man in question contracted enteric fever before admission into hospital. Thus even on the somewhat improbable supposition that he contracted the disease the day before admission to hospital (it is much more likely that the fever was contracted in the bazar at the same time as the venereal affection from which he suffered, say, from 4 to 10 days before admission), the period of incubation would be about 34 days. My own experience, however, would seem to indicate that the period of incubation may extend much beyond 40 days, but the data at my disposal at present are too few to warrant a definite conclusion on this point."

Solon.—Of the 13 men admitted into hospital, and of whom 4 died, 10 had been less than six months in India. On the question of youth and recent arrival and the cause of the fever the medical officer writes:—"My opinion is that these lads are unable to acclimatize. Their skins and various organs (glands) of secretion, excretion, and elimination are unable to work effectually under their new conditions of existence. Further, their nervous systems—

" a main spring governing a very sensitive machine—are too susceptible to the various changes to which they are exposed. The consequence of this is that a lad owing to over-exposure, over-fatigue, over-eating and drinking may throw his organs at once out of gear. The eventual result of this is (I might call it) acute neuro-asthenia, with a high temperature; this latter one finds under these conditions one cannot reduce. What is the result? Why, a congestion, after a time going on sometimes to inflammation of all the glands. A continuation of this condition means suppurration and ulceration of the same glands, and consequently a condition analogous to, if not identical with enteric fever. The final results, if death occurs, are indistinguishable from enteric fever. I maintain, therefore, that the cases that have occurred up here have not been produced by specific poison."

The Principal Medical Officer thinks that this theory might appear to have something to support it if advanced as explaining causation of enteric fever in young men living in the plains of India during their first year of service in the country, but it loses weight when applied to the cases of young men who have arrived in India during the cool season and have moved up to the hills—where the heat is never excessive, and where the conditions of life are not very dissimilar to those of a hot summer at home—before the great heat of an Indian summer has commenced.

Lower Topa.—Of 9 men admitted, 8 had less than six months' service in India. Six were admitted within a few days after arrival, and it is evident that they contracted the disease either at their former station or on the march up to the hills. The three others were suspected to be due to impure milk, as they were admitted (2 on one day and the 3rd on the day following) about 14 days after the medical officer had found that impure milk was being supplied to the men.

Bhagsu.—At this station, where the detachment was mostly composed of young recruits just out from England, and where in 1892 there had been 7 cases of enteric fever, only one man was attacked with the disease, and as he was admitted eight days after arrival at the station he evidently did not contract it at Bhagsu. The medical officer remarks:—"The absence of enteric fever I consider largely due to the precautions at once put in practice and most strictly carried out. These were chiefly directed to the milk supply, so frequent a cause of contagion, and only in the previous year the almost certain cause of an outbreak of enteric fever. Cows were kept for the use of the detachment, and were milked in the presence of a responsible European soldier. The milk was at once put under lock and key, and was practically beyond the possibility of being tampered with. It was frequently tested by the medical officer in charge. This system, of course, was extremely obnoxious to the cow owner, who attempted bribery in vain. As a last resource he actually asked an officer of the detachment to be allowed to dilute the milk with clean water, for, as he remarked, it was unusual for soldiers to drink undiluted milk. This speaks for itself, and shows how important it is that a pure milk supply should be secured for all European soldiers."

*Simple Continued Fever* caused 875 admissions into hospital, with an average constantly sick of 46·16 men, being in the ratios of 20·3 and 1·07 per 1,000 respectively, as compared with 54·0 and 2·09 in the preceding year, and 68·8 and 2·47 the septennial average. There was no death from this cause during the year, against one death or a ratio of ·02 per 1,000, in 1892, and of ·04, the average of the preceding seven years. The highest admission rate, 72·2, occurred, as in the previous year, in the Bundelkhand District, which then showed the exceptionally high ratio of 173·9. It was followed by 33·1 in the Rawalpindi, and 30·7 in the Lahore Districts. There were no instances of this disease in the Peshawar District. The Quetta District had a ratio of ·5 per 1,000, and was the only case in which an increased ratio occurred during the year, the ratios having declined very considerably from the preceding year in all other districts.

*Cholera*.—There were only 9 cases of cholera with five deaths during the year, as compared with 134 and 95 the year before; the equivalent ratios being ·2 and ·12 against 3·2 and 2·25 in 1892, and 2·5 and 1·70, the septennial average respectively. All the cases occurred in the second quarter, as shown in Abstract XIX., and at the following stations:—At Mian Mir 3 men were

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attacked, all of whom died. No cause for these cases could be discovered. At Umballa there were 4 cases (one fatal). All occurred in May, one on the 3rd, 2 on 4th, and one (the fatal case) on the 22nd. The medical officer remarks:—"The origin of the disease is difficult to trace, " as the men stated that they had not been out of cantonments; they came " from different barracks and parts of cantonment; were not acquainted or " in any way connected with each other. In all probability the disease was " brought into the station by human intercourse, as towards the end of April, " after the Hurdwar fair, cholera of a virulent type broke out amongst a gang " of coolies working on the Simla road near Kalka. On the occurrence of 6 " deaths out of 12 persons attacked, the remainder dispersed and fled from " the neighbourhood in terror, and doubtless made their way to Umballa and " Kalka (where four other cases occurred)." At Dum Dum one man died of the disease. Shortly before he was attacked, on the 20th June, he had been wading up to his chest in a drain full of impure water.

*Dysentery* contributed 961 admissions into hospital with 21 deaths, and the number constantly non-effective from this disease was 72·10 men. The corresponding ratios, 22·3, ·49, and 1·68 per 1,000, were in the case of the first two lower than those of the previous year by 2·5 and ·10 respectively, that of constantly sick being identical for the two years, and lower also than the average by 3·2 and ·14 for the admissions and deaths, but fractionally higher for constantly sick. Abstract XX. shows the prevalence of this disease in each military district, and Abstract XXI. its prevalence in each quarter of the year. The highest rate of prevalence, 39·9, was again in the Presidency District, being an increase of 1·6 on that of the previous year, the next being, 33·2, in the Allahabad District, also an increase of 2·2, and the third, 30·3, in Rohilkhand, a fall of 6·2. Peshawar was lowest with 5·9, as compared with 13·5 in 1892, and Quetta, next above with 12·9, about half the previous year's ratio. The ratio of mortality was highest in the Presidency District, 1·07, and next in the Lahore District, 1·04, these being ·35 and ·20 per 1,000, greater than in the preceding year. There were no deaths in the Narbudda, Bundelkhand, and Peshawar Districts, and the ratios of the Allahabad and Oudh Districts were only about a third of those of the year before. The highest rate of admissions occurred in the fourth quarter, 6·6 per 1,000; those of the second and third quarters were identical, viz., 6·5, and that of the first lowest, 2·7; this was somewhat similar to the sequence observed in the preceding three years when the quarters followed in order from the fourth to the first. The ratios of mortality differed, however, the highest, ·16, having occurred in the second, the next being ·14 in the fourth, ·12 in the first, and ·07 in the third quarter.

*Other diseases* of this sub-group consisted of 2 cases of influenza and 5 of mumps, against 623 of the former and 8 of the latter in the preceding year, and call for no remarks.

*Malarial Fevers.*—The number of admissions into hospital for malarial fevers amounted to 18,184 with 42 deaths, including those of 2 invalids after leaving the Command, and the number of men constantly non-effective to 653·60; these included 17,302 admissions with 6 deaths from ague, 537 cases and 32 deaths from remittent fever, and 345, 4 fatal, of malarial cachexia. The ratio of admissions from these causes was 422·9, of mortality, ·97, and of constantly sick, 15·20 per 1,000, all being lower than those of the preceding year by 72·4, ·86, and ·97 respectively; but in excess of the septennial average by 35·4, ·23, and 3·30 severally. The Quetta District leads this year with the exceptionally high admission rate of 1188·8, which is over double the previous year's ratio, the Peshawar District following closely with 1091·3, a small decline of 61·2 from the ratio of 1892, Lahore being third with 780·2, also a fall of 65·4. The lowest ratio occurred in Oudh, 106·0 per 1,000, this being less than half its ratio in the year before. Besides Quetta, three other districts show increased rates of prevalence, but the excess is insignificant, and of the districts having reduced ratios the most marked decreases were those in Bundelkhand, 328·0, and Rawalpindi, 197·9 per 1,000. Of the deaths from these fevers, 19 happened in the Peshawar District, and 5 each in the Quetta and Lahore and Presidency Districts, 3 in that of Rawalpindi, 2 in Sirhind, and 1 in Bundelkhand. At Peshawar, although these fevers were almost as prevalent as in 1892, the type was not so severe. Nearly all the deaths

occurred during the first 6 months of the year when the malarial effect of the heavy rainfall of the previous year was still present.

*Septic Diseases.*—These included 1 case of sloughing phagedæna, 65 of erysipelas with one death, 4 of pyæmia, 2 fatal, and a fatal case of septicæmia, or a total of 71 admissions and 4 deaths, being equal to the ratios of 1·7 and ·09, against 4·0 and ·19 respectively in the preceding year, and 2·1 and ·12, the seven years' average rates.

*Venereal Diseases.*—*Primary syphilis* alone caused 4,999 admissions into hospital, giving a ratio of 116·3, and being an increase of 24·8 and of 20·2 in the two comparisons. The average number constantly sick was 433·23 men, or in the ratio of 10·07 per 1,000, which exceeds that of the previous year by 2·35, and the average by 2·36. In addition, there were 3,958 admissions for simple venereal ulcer, with an average number constantly inefficient of 308·07 men, making a total of 8,957 admissions, and an average constantly sick of 741·30 men from primary venereal sores, and giving a ratio of 208·3 for admissions, and of 17·24 per 1,000 for constantly sick; the former exceeding the corresponding ratio of the preceding year by 51·0, and the septennial average by 33·6 per 1,000, and the latter by 5·10 and 4·28 per 1,000 respectively. For *secondary syphilis* there were 2,351 admissions and 4 deaths, including that of an invalid, with an average constantly sick of 252·65 men. The admission ratio, 54·7 per 1,000, and that of mortality, ·09, show the fractional decline of ·4 and ·08 per 1,000 respectively, while the ratio of constantly sick, 5·88, gives a fractional increase of ·32 per 1,000. Compared with the average ratios of the preceding seven years, the admission and constantly sick rates were higher by 9·3 and 1·52, but the mortality rate was ·01 lower. *Gonorrhæa* furnished 8,035 admissions, and the average number of men constantly sick from that disease was 600·04. The former was in the ratio of 186·9, and the latter, 13·95; these being greater by 18·5 and 1·65 than the ratios of 1892, and by 16·1 and 1·96 per 1,000 than the average ratios of the preceding seven years. Taking the four forms of venereal affections together, they give an aggregate ratio of 449·9 per 1,000 for admissions, which exceeds that of the previous year by 69·1, and the septennial average by 59·0 per 1,000; while the total constantly sick rate comes to 37·07 per 1,000, representing a loss to the force from constant inefficiency from these causes alone of 1593·99, against 1265·52 men in the year before, the ratio being higher than that of 1892 by 7·07, and higher than the average by 7·76 per 1,000. Comparing the ratios of prevalence of the different forms of venereal disease in the various districts, shown in Abstract XVI., it is observed that the highest admission ratio for primary syphilis was 273·9 in the Rohilkhand District, an increase of 71·6 on the last year's rate; this was followed by 195·4 in the Oudh District, an increase of 3·8, and then 185·9 in the Allahabad District, an increase of 64·3. The lowest ratio of admission was 30·2 in the Peshawar District, an increase of 12·3 on the rate in the previous year, the next above being 36·0 in the Meerut District, the third ratio was 48·5 in the Narbudda District, an increase of 5·2. The highest ratio of prevalence of secondary syphilis was 103·2 in the Narbudda District, double the rate in the previous year, followed by 94·3 in the Rohilkhand District, a decrease of 14·8; the next ratio was 84·0 in the Presidency District, a decrease of 5·9. The lowest ratio of admission was 18·8 in the Peshawar District, as against 23·3 in 1892, the ratio next above being 32·9 in the Rawalpindi District, a fractional increase, and then 34·0 in the Meerut District. The highest ratio for gonorrhæa was 253·4 in the Oudh District, a decrease of 18·2 on the last year's rate; the next, 252·1, occurred in Bundelkhand, an increase of 92·1, then 251·5 in the Allahabad District, an increase of 5·4. Peshawar gave the lowest rate of prevalence, 76·6, which compares very favourably with the previous year; the ratio next above was 94·4 in the Quetta District, a decrease of 12·3, then 147·8 in Sirhind, an increase of 45·6 on the previous year's rate. Taking these venereal diseases together, the highest ratio of admission was 618·2 in the Rohilkhand District, followed by 523·6 in Oudh, 519·4 in the Allahabad District, and 432·1 in Bundelkhand. The lowest admission rate was 125·6 in the Peshawar District, the next above, 221·2 in the Quetta District, 238·7 in the Meerut District, and 275·9 in the Rawalpindi District. Compared with the return for the previous year, there is a decrease of admission rate in the Presidency District of 81·4,

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in the Peshawar District of 26·3, and in Oudh one of 13·2. In all the other districts increase is observed, the most marked being 151·8 in the Bundelkhand District, 129·8 in the Lahore District, and 90·8 in the Rohilkhand District.

The medical officer at Allahabad reports that in several of the cases of secondary syphilis the disease was of a most virulent type, resisting all treatment. At Dinapore, where one field battery and 7 companies of infantry are located, the average number constantly sick with venereal diseases was in 1891, 38; in 1892, 39; and in 1893, 63. Therefore, in 1893, the equivalent of more than half a company was always in hospital with venereal disease, and the medical officer remarks that these men could not have proceeded on active service if there had been a sudden call to arms. At Lucknow 57·07 per cent. of the strength were admitted during the year suffering from venereal diseases, and 53 men were invalided for secondary syphilis. The average numbers daily sick out of an average strength of 2,643 were—

For primary syphilis	-	-	-	-	43·84
„ secondary „	-	-	-	-	27·99
„ gonorrhœa	-	-	-	-	55·27

At Cawnpore 486 out of 846 admissions were for venereal disease. At Fyzabad venereal diseases accounted for more than half the average number constantly sick for the year. At Bareilly 125 men were admitted for secondary syphilis, and of these 12 were invalided. At Ranikhet secondary syphilis caused 100 admissions, and 8 men were invalided for this disease. At Jhansi the medical officer remarks that in the evenings prostitutes frequent the roads surrounding cantonments and importunately solicit the soldiers, the police being powerless to prevent them. The medical officer at Saugor writes:—“The cantonment and the city are adjoining each other, and these women (the prostitutes) leave the city, where they reside, at dusk and wander over the back roads of the cantonment, where they meet the soldiers.” At Chakrata the medical officer remarks:—“These diseases caused 30·93 per cent. of the total admissions and very nearly half the number constantly sick. The number of admissions under this head exceeds that of any year since 1889. The figures are as follows:—

Year.	Average Strength.	Admissions.
1889 - - - - -	949	395
1890 - - - - -	814	266
1891 - - - - -	1,120	278
1892 - - - - -	990	211
1893 - - - - -	991	370

“The considerable diminution in the number admitted in 1892, compared with the previous 4 years, was attributed by my predecessor in his annual report to the successful working of the cantonment hospital. I think the marked increase during the year under review seems to illustrate the inefficiency, under somewhat altered circumstances, of the institutions in question as a preventive agency. There was reason to believe that the women were perfectly cognisant of the agitation which was proceeding relative to the alleged evasion of the orders of Government, and did not present themselves as readily or regularly for voluntary examination as before.”

Under Sub-group V. are included 3 fatal cases of *hydrophobia* and a case of *splenic fever*. The first case of *hydrophobia* occurred in March at Fyzabad; the deceased soldier stated that he was bitten by a puppy four years ago and by a monkey three years ago; some men of his company, however, mentioned that he had got a scratch from a jackal in the previous November. The second case happened at Benares in the latter end of March, and is ascribed to the bite of a rabid dog about four months previously. The third case was that of a

soldier at Quetta, who was admitted into hospital on the morning of the 28th August and died the same day. It appears the man had been bitten by a dog 3½ years ago at Kamptee, the scar remaining on the back of the left hand. It is, however, added by the medical officer in charge that "several cases of rabies have occurred lately in Quetta, but no history of recent inoculation could be obtained nor was there any recent scar or wound on the man's body." In the preceding year only one fatal case of hydrophobia was returned.

*Parasitic Diseases* caused 142 admissions, 131 of which were instances of tænia solium and 6 of tænia mediocanellata. The ratio, 3·3 per 1,000, was fractionally lower than that of the year before and than the septennial average. The highest ratios were 6·7 and 6·4 in the Sirhind and Allahabad Districts, against 2·0 and 2·5 respectively in the preceding year. There were no admissions for these diseases in Narbudda and Bundelkhand, and the ratio of the Oudh District was only ·6, against 2·4 in 1892.

Of *scurvy* there were 15 cases against 11 in the previous year, the ratio, ·3 per 1,000, being the same in both years, against 1·0 per 1,000, the septennial average. Ten of the cases occurred in the Lahore District, 3 in that of Meerut, and one each in the Oudh and Rawalpindi Districts.

*Alcoholism* caused 175 admissions into hospital and 4 deaths, of which 22 with 3 deaths were due to delirium tremens. The ratio of admissions was 4·1, as compared with 4·6 and 11·3 per 1,000 in the two comparisons.

Group C., which included 866 admissions for *debility* with 2 deaths (including that of an invalid) and 3 for *malformations* with no deaths, gave a ratio of 20·2 per 1,000, a decline of 7·3 from the preceding year and one of 2·5 from the average. In the previous year one death was returned under this head. 65·41 men were constantly inefficient from this cause, being in the ratio of 1·52 per 1,000, against 1·84 and 1·53 in the two comparisons. The highest rate of prevalence was 60·9 in the Lahore District, the next being 25·4 in Narbudda; and the lowest, 6·7 and 7·7, in the Quetta and Peshawar Districts respectively. Excepting Lahore and Quetta, which are slightly higher, the ratios of all the other districts are lower than those of 1892; that of the Presidency, which was then highest, being now less than a third; that of Narbudda, which stood third, showing a decline of 18·1, and that of Allahabad being somewhat below half.

*Rheumatism* contributed 1,256 admissions into hospital and one death, 50 of these with the fatal case having been due to rheumatic fever, and gave an average constantly sick of 98·10 men. The admission rate, 29·2, was lower than in the preceding year and than the average by 2·1 and 2·5 respectively; the ratio of mortality was ·02, against ·09 and ·07; and that of constant inefficiency 2·28, although fractionally lower than in 1892, was fractionally higher than the septennial average. The rate of prevalence was highest in the Lahore District; this was 44·0 per 1,000 and nearly double its previous year's ratio; Rohilkhand was next highest, 39·2, an increase of 6·4; and Quetta, which was highest in 1892, third, and its ratio, 36·7, being a decline of 11·7. The lowest ratio, 9·9, in the Peshawar District was less than half, and 16·2 in Narbudda, a little more than half that of the preceding year. Meerut District also shows a notable decline of 16·1.

*Tubercular Diseases* accounted for 122 admissions and 36 deaths, including those of 9 invalids after leaving the Command, the former being in the ratio of 2·8, the same as in the two years preceding, but fractionally (·5) lower than the average, and the latter ·84, or ·18 and ·03 less than in 1892 and the septennial average. They included 118 cases of lung and 4 of testicular disease, the mortality being due to the former. Every district in the Command had instances of these diseases, the Allahabad and Quetta Districts furnishing the highest admission ratios, 4·8 and 4·3, more than double their ratios of the year before, and the Peshawar (1·8) and Rohilkhand (1·9) the lowest.

For the *other diseases* under Group D. 385 admissions and 5 deaths are returned, the ratios being 9·0 and ·12 per 1,000, against 10·9 and ·17 in 1892, and 11·1 and ·15, the septennial average respectively. The cases were principally of non-malignant new growths. There were also, however, 4 of malignant disease, viz., 2 of sarcoma and 2 of carcinoma; while 84 of the admissions were due to anæmia, 20 to scrofula, 4 to diabetes mellitus, and 2 to purpura; the deaths were from diabetes 3, and anæmia and carcinoma one each.



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**LOCAL DISEASES.**—*Diseases of the Nervous System* caused 379 admissions and 14 deaths, and the equivalent ratios were 8·8 and ·33 per 1,000, both being fractionally less than in the previous year and lower also than the average by 1·9 and ·06 respectively. Of the admissions 68 are recorded for mental diseases, the ratio, 1·6, being identical with that of the two years preceding, as well as with the septennial average. Instances of these diseases occurred in every district in the Command, those of Oudh (3·5), Allahabad (3·2), and Bundelkhand (3·1), having had the three highest ratios; while Presidency (·4), Peshawar (·7), Lahore (·8), and Rawalpindi (·8) were lowest. It may be mentioned that the Presidency and Bundelkhand Districts stood highest in this respect in the preceding year with a ratio of 3·2 per 1,000. Mental diseases apart, the admission rate for nervous diseases was greatest, 10·8, in the Rawalpindi District and more than double its previous year's ratio, the next in order being 8·9 in Meerut (also more than double its ratio of 1892), 8·5 in Narbudda, 8·2 in the Presidency, and 8·0 in the Rohilkhand and Bundelkhand Districts. The last-named stood highest in the previous year with 13·7. The principal causes of the admissions were neuralgia 197, epilepsy 37, vertigo 22, and diseases of the brain, &c., 21; and the deaths were due to inflammation of cerebral membranes 6, inflammation of the brain and its membranes 2, apoplexy 2, and myelitis, acute ascending paralysis, epilepsy, and cerebral hæmorrhage one each.

*Diseases of the Eye* caused 502 admissions, or in the ratio of 11·7 per 1,000, against 12·8 and 13·9 in the two comparisons; Oudh giving the highest rate of prevalence, 21·4, followed by Narbudda with 16·9, and Quetta 16·7; the lowest being Rawalpindi, 8·4, and Bundelkhand and Meerut, 9·4. The diseases causing the greatest number of admissions were conjunctivitis 356, blepharitis 24, ulcer of the cornea 14, iritis 14, opacity of the cornea 12, and keratitis and sty 10 each.

*Diseases of other Organs of Special Senses.*—These caused 709 admissions and one death, of which 16 with the fatal case were for affections of the nose, the remainder being cases of aural disease, chiefly of the external meatus, but including also 88 cases of inflammation, ulceration, and perforation of the membrane tympani, and 24 of deafness. The ratio, 16·5, while lower than that of the preceding year by 2·1, was greater than the average by 1·3. There was one death in the present year (from epistaxis) against none in the previous year.

*Diseases of the Circulatory System.*—376 admissions and 9 deaths, including 2 of invalids, are returned, and the number of men constantly non-effective was 57·10; the equivalent ratios were 8·7 and ·21 for the admissions and mortality, the former being 1·3 below that of the previous year, and the latter a little over a third; the constantly sick rate, 1·33, was, however, fractionally greater. Compared with the average of the preceding seven years there was a decline of 3·3 in the admission ratio, and the mortality rate was about half, but that of constantly sick shows an increase of ·10 per 1,000. As in the preceding year, the Lahore District leads with an admission ratio of 15·2, an increase of 1·7, followed by Oudh with 14·1, a fractional increase, the lowest being 4·4 in the Peshawar District, or a little over half its ratio in 1892, and 5·3 in the Presidency against 13·0. The Meerut and Quetta Districts had the highest mortality rates, ·49 and ·48 per 1,000. As usual, the principal cause of the admissions was palpitation, of which there were 245 cases, and of the remainder, 47 cases of valvular disease of the heart, and 32 of varix were the most important. The deaths in the country were due to aneurysm of the arteries 3, fatty degeneration of the heart 2, and valvular disease and syncope one each. The deaths of the invalids were due to valve disease of the heart, and aneurysm of the aorta one case respectively.

*Diseases of the Respiratory System.*—For these diseases 1,636 admissions and 52 deaths, including 2 of invalids, are recorded, and the ratios were 38·0 and 1·21 per 1,000 respectively, against 39·9 and 1·16 in the preceding year, and 39·2 and 1·08, the septennial average rates; 91·64 men were constantly inefficient from these causes, the ratio being 2·13, against 2·09 and 2·27 in the two comparisons. The Quetta District again, as in the preceding three years, comes first with the high admission rate of 138·7, against 83·7 in 1892; Lahore being second with 61·9, an increase of 9·6. Narbudda and Oudh were lowest, the former having a ratio of 19·2, and the latter one of 20·8. Mortality

also was greatest in the Quetta and Lahore Districts, the ratios being 8·10 *Bengal.* (against none in 1892) and 2·70 (against 1·27) respectively. The Presidency District had a death rate of 1·42, against no deaths in the previous year. Of 1,636 admissions, 1,305 were for bronchitis, 184 for pneumonia, 64 for pleurisy, 31 for laryngitis, 19 for hæmoptysis, and 16 for pneumonic phthisis. The deaths in the country were due to pneumonia 49, pneumonic phthisis 3, bronchitis and empyema 2 each, and laryngitis, abscess of the lung, and pleurisy one each. The deaths of the invalids were due to pneumonia.

*Diseases of the Digestive System.*—The number of admissions for diseases of the digestive system amounted to 5,164, the deaths to 68, including 5 of the invalids; and there were 230·32 men constantly inefficient from these causes. The ratio of admissions was 120·1, that of mortality 1·58, and that of constantly sick 5·36, all being less than the corresponding ratios of the preceding year by 27·7, ·36, and ·68 respectively, and lower also than the septennial average rates by 23·9, ·19, and ·44 per 1,000 severally. Here also the Quetta District stands highest as to rate of prevalence, with a ratio of 172·1, against 242·0 the year before, the Allahabad District coming next with 157·9, against 173·2. The Peshawar District, as in the previous year, was lowest with a ratio of 67·0, a slight decline, and Meerut next above with 97·4, against 168·2 per 1,000.

The greatest number of admissions occurred, as heretofore, under mouth and throat affections, and amounted to 1,646, diarrhoea following with 1,186, hepatic disorders with 1,017 (which include 393 cases of congestion of the liver, 287 of hepatitis, 257 of jaundice, and 60 of abscess), dyspepsia with 619, piles 253, and colic 230. Of the 63 deaths in the country, 40 were from hepatic abscesses, 18 being associated with dysentery, 8 from peritonitis, 3 from abscess in the sub-peritoneal tissue, 3 from hepatitis, 2 from typhlitis, and one each from ulceration of stomach, hæmorrhage from the intestines, obstruction of the intestines, intussusception, abscess of the rectum and anus, acute yellow atrophy of the liver, and jaundice. The deaths of the invalids were 4 from abscess of liver and 1 from hepatitis. Abstract XX. exhibits the prevalence of and mortality from diarrhoea and hepatic affections in the several districts of the Command; and Abstract XXI. the rate of and mortality from those diseases in each quarter of the year.

*Diseases of the Lymphatic and Glandular System* were the cause of 1,273 admissions and 3 deaths, including that of an invalid, and gave an average number constantly sick of 153·15 men, being in the ratios of 29·6, ·07, and 3·56; the first and third were higher than the ratios of the year before by 1·5 and ·48, but the mortality ratio somewhat more than half. Compared with the septennial average all were higher, viz., by 2·0 per 1,000 for admissions, ·04 for mortality, and ·80 for constantly sick. The highest admission ratio was 60·0 per 1,000 in Narbudda, nearly double its ratio in 1892, and the lowest, 13·6, in the Peshawar District, virtually the same as in the previous year, when also it was lowest. 1,142 of the admissions were for inflammation and suppuration of the lymph glands, mostly of the groin, and 113 were cases of splenic disease; the two deaths in the country and the death of the invalid were due to induration and enlargement of the spleen from ague.

*Diseases of the Urinary System* furnished 60 admissions and 5 deaths, and the equivalent ratios, 1·4 and ·12 per 1,000, were both fractionally below those of the previous year and the septennial average. The highest admission rate occurs again in the Narbudda District, 3·1, but this is a decline of 1·0 per 1,000 from that of the year before. Peshawar comes next with 2·2 against ·7 per 1,000, the lowest in the preceding year. The lowest in the present year was ·5 in Sirhind, against 2·0 per 1,000 in 1892. The most important of the 60 admissions were 16 for nephritis, 3 being fatal, 15 for inflammation of the bladder, and 12 for incontinence of urine, the remaining two deaths being due to abscess of kidney and rupture of the bladder respectively.

*Diseases of the Generative System.*—The admissions amounted to 4,613, and the average number of men constantly non-effective to 350·97, the former giving a ratio of 107·3, or an increase of 26·1 over the preceding year's rate, and one of 11·3 over the seven years' average rate, and the latter a ratio of 8·16 against 5·41 and 6·26 respectively in the two comparisons. There were

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no deaths. The rate of prevalence of these affections was again, as in the two years preceding, highest in the Narbudda District, 233·3, this being, moreover, an increase of 50·2 over that of 1892. The ratios of the Meerut (197·3), Allahabad (184·3), and Rawalpindi (175·1) Districts, which were next in order, show the notable increases of 57·9, 51·0, and 73·9 per 1,000 respectively. The lowest admission ratio was 27·4 in Rohilkhand, a decrease of 18·4. Of the admissions, simple venereal ulcers (regarding which remarks have already been made) accounted for 3,958, the more important of the remaining 655 cases being 368 of orchitis, 117 of inflammation of the glans penis, and 57 of stricture of the urethra.

*Diseases of the Organs of Locomotion* contributed 408 admissions and 3 deaths, including that of an invalid, against 326 and one death in the preceding year, giving the ratios of 9·5 and ·07, as compared with 7·7 and ·02, the year before, and, 7·3 and ·03, the septennial average rates. Ranging from 4·8 in the Peshawar District to 11·6 per 1,000 in Oudh, the admission ratios of all the districts, excepting Presidency and Peshawar, exceeded those of the preceding year. 271 of the admissions were due to synovitis alone, and two deaths to abscess of joints and one to abscess of muscles.

*Diseases of the Connective Tissue.*—These caused 916 admissions and one death from abscess of the connective tissue, or in the ratio of 21·3 and ·02, the former being a decline of 3·6, and the latter identical with the previous year's ratio. The average ratio for the preceding seven years was 22·0 per 1,000 for admissions, and ·02 for mortality. The highest ratio of admissions was 27·2 in the Allahabad District, and the lowest, 13·1, in Narbudda, and, except that the ratio of Bundelkhand was less than half its ratio in 1892, when it stood highest, there is nothing further of note under this head.

*Diseases of the Skin*, for which there were 3,165 admissions into hospital, giving an average constantly sick of 134·01 men, had a ratio of 73·6 for the former, and of 3·12 for the latter, which compare favourably with the corresponding ratios of the previous year, being 1·1 and ·03 lower; they were, however, in excess of the septennial average by 4·3 and ·31 respectively. As in the preceding year, the rates of prevalence for these diseases were greatest in the Allahabad and Oudh Districts, 134·3 and 122·9. The lowest ratio was 48·1 in the Quetta District. Boils, ulcers, whitlows, ringworm, eczema, and itch were as usual the principal causes of the admissions under this head.

*Poisons.*—16 cases of poisoning with 6 deaths are recorded, against 22 and 3 deaths in 1892. These comprised 4 of dog-bite, 3 cases of alcoholic poisoning, 2 of which ended in death (4 other deaths occurred out of hospital), 2 of wounds by stinging insects, 2 of wounds by animal venom, and one each of poisoning by arsenic, by fish, snake-bite, scorpion sting, and wound not specified.

*Injuries.*—The admission rate under this head was 99·6 as compared with 97·8 the year before, and 112·9, the average of the preceding seven years; and the ratio of mortality 1·77, against 2·66 and 2·34 in the two comparisons. The number of men constantly non-effective from these causes amounted to 212·98, being in the ratio of 4·95 per 1,000, an increase of ·56 over that of 1892, and one of ·09 over the average. Of general injuries there were 117 cases with 39 deaths, against 201 and 73 in the preceding year; and they comprised 72 cases of heat apoplexy, 23 of sunstroke, 16 of burns and scalds, 5 of multiple injury, and one of drowning; the deaths were due to heat apoplexy 18 (2 out of hospital), drowning 15 (14 out of hospital), multiple injury 3 (all out of hospital), sunstroke 1, and one each (both out of hospital) to asphyxia from plugging of air passages with foreign substances, and asphyxia from being lain upon while drunk by another drunken man. For local injuries the admissions numbered 4,167 and the deaths 37. The principal causes of the admissions under this head were, as usual, wounds, sprains, contusions, and abrasions, which together gave an aggregate of 3,769; among the more important of the remainder being 224 cases of fractures, 40 of dislocations, 33 of gunshot wounds, 33 of strains, 23 of burns and scalds, and 9 of concussion of the brain. The deaths included 19 from gunshot wounds, 7 from fractures, 2 each from concussion of the brain, contusion of abdomen with rupture of viscera, and rupture of the bladder, and one each from wounds, fracture of vault of skull, compression of brain, foreign body in asophagus, and dislocation of spine with fracture.

Sixteen cases of suicide are recorded (against 18 in the previous year), 12 from gunshot wound of head, and one from a penetrating wound of the lung, 2 from drowning, and one from cut throat. In twelve no motive could be ascertained, but four were apparently the result of drink. For the rest the assumed incentives were:—Disappointment in not being permitted to go to Kneller Hall to qualify for bandmaster, intense distress at the loss of a navigation certificate, depression of spirits owing to the death of his mother, and depression consequent on the absence of letters from home. Of the men one was 20 years of age, one 22, two 23, four 25, one 27, two 28, the others being 29, 30, 31, 32, and 33 years of age respectively. As to length of service, 4 of the men had seven years', 3 had eight, 2 four, the remainder were of one, two, three, five, eleven, twelve, and fourteen years' service respectively. Three of the cases occurred at Quetta, 3 at Meerut, 2 at Cawnpore, and one each at Calcutta, Dinapore, Agra, Saugor, Delhi, Multan, Attock, and Peshawar.

There were also 12 cases of self-inflicted injuries (against 17 in the preceding year), 9 of which were wounds of the throat, and the others by gunshot, strangulation, and stabbing. 4 of the cases were presumably due to drink, and 4 were apparently labouring under mental aberration; one was due to depression from loss of money by gambling; another to monetary difficulties and entanglement with a married woman; in one the reason given was that the men of his battery had accused him of unnatural offences; and no cause or motive could be discovered in the twelfth.

Two hundred and six surgical operations are recorded for the year, of which 198 were primary and 8 secondary, death following in 13 of the former. Amputation of the thigh at middle third was performed in two cases, one of scrofulous caries resulting in recovery, and one of phlegmonous erysipelas ending fatally. Amputation (secondary) of the thigh at lower third was also performed successfully in a case of gunshot wound; but death followed a similar operation for gangrene in a case of enteric fever. Amputation of the leg was successfully carried out in a case of sarcoma, as were also amputations of the fingers in 7 cases (1 secondary) and of the toes in 9 cases. Recovery followed in a case of traumatic aneurysm, and in one of wound in which ligatures were applied to the left temporal artery, anterior branch, and to the ulnar artery. Excision of the eyeball in 3 cases of keratitis, contusion and wounds, and injuries of parts within the orbit, respectively; iridectomy in two cases of rheumatic iritis and in one of traumatic iritis, and laryngotomy in a case of laryngitis, were also successfully done, but abdominal section performed in a case of intestinal obstruction did not avert death; and in a case of herniotomy the patient was subsequently invalided to England. Surgical treatment was resorted to in 18 cases of liver disease; hepatitis (2) and hepatic abscess (16), 9 of which recovered and 9 terminated fatally; 12 of the cases were treated by aspiration, death following in 8; 3 by incision (one fatal) and 3 by tapping and drainage. Of the remainder the only cases worth mentioning are removal of the glands affected in 3 cases of inflammation and suppuration of lymph glands, 2 of which were secondary, and removal of sequestra by partial excision for necrosis of jaw.

*Invaliding.*—1,121 men were invalided to England during the year, giving a ratio of 26·07 per 1,000 as compared with 22·60 in the previous year, and 23·56, the average of the preceding ten years. Referring to Abstract XLI., in which certain statistics relating to the different arms of the service are recorded, it is found that the invaliding ratio in the cavalry was 24·35 per 1,000, an increase of 3·95 on that of 1892. In the artillery the ratio 27·67 was also an advance of 2·65 on the preceding year. The ratio in the infantry was 24·90, and higher than that of the previous year by 3·59.

The relation of age and length of service in the country to the sickness, mortality, and invaliding of the year have already been exhibited in tables given in the foregoing pages. Unlike previous years it will be seen that the invaliding ratio in the present year was highest, 35·35 per 1,000, among men of 35 to 40 years of age, who stood fourth in 1892 with a ratio of only 20·70; while men of 40 and over, who were highest in this respect last year, come next with 34·48, an increase of 4·69; those of 20 to 25 years of age, who stood second, being now third with 30·72, an increase of 5·10. The two succeeding quinquennial periods follow with 23·62 and 14·37 respectively, the

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former being higher by 4·19 than in the preceding year, and the latter lower by 9·54. Men under 20 years of age were as usual lowest, and their ratio, 4·82, was just over a fourth of that in 1892.

As to the influence of length of service in the country, as shown in the table referred to, it is found that the sequence of the groups here also differed from that in the preceding year, men in their third year of service, who were then fifth in the comparison, furnishing now the highest ratio of invaliding, as high as 35·83 against 20·17 per 1,000; the next being men of ten years' service and over with 29·36, an increase of 5·22, and the third, men in their second years' service with 28·74 against 32·80, the highest in 1892. These are followed by 26·76 for the fourth year men, an increase of 2·99, and 24·39 for men of five to ten years' service, a decline of 3·82 from the previous year when they stood second; men in their fifth year and those in their first year of service, as in the preceding year, coming last with respectively 22·00 and 17·91, against 18·12 and 14·48.

The principal causes of invaliding were 154 cases of malarial fevers, being in the ratio of 3·58 per 1,000, 147 of debility, or a rate of 3·42, 133 of diseases of the circulatory system giving a ratio of 3·09 and including 70 cases of palpitation and irregularity of the action of the heart; 43 of valvular disease, 13 of varix, 131 of secondary syphilis or a ratio of 3·05, 74 of diseases of the digestive system, or 1·72 per 1,000, and including 30 cases of hepatitis, 10 of hernia, 7 of hepatic abscess, 5 of congestion of liver, and 5 of fistula in ano, 51 cases of tubercular diseases, or 1·19 per 1,000; 50 of nervous diseases, or 1·16 per 1,000; 49 of mental disease, or 1·14 per 1,000; 43 of rheumatism, or 1·00 per 1,000; 43 of diseases of the ear, or 1·00 per 1,000; 17 of these being cases of perforation of the membrana tympani, and 16 of deafness, and 40 cases, or ·93, of dysentery. Compared with the corresponding ratios of the previous year and the average millesimal ratios of the preceding seven years, the principal differences are increases of 1·73 and 2·12 under malarial fevers, of 1·01 and 1·49 under secondary syphilis, ·46 and ·11 under diseases of the circulatory system, ·35 and ·25 under diseases of the lymphatic and glandular system, ·31 and ·07 under diseases of the respiratory system, ·28 and ·11 under nervous diseases, and ·24 and ·43 under debility, while the only important decreases were ·39 and ·41 for local injuries, and a decrease under mental diseases of ·21 as compared with 1892, but the present year's ratio was ·01 higher than the septennial average.

The number of men finally discharged as medically unfit for further service was 456, equal to a ratio of 10·60 per 1,000, which is lower than the corresponding ratio in the preceding year by 1·66, and below the decennial average rate by 2·53. The principal disabilities necessitating invaliding were diseases of the circulatory system 106 cases, or 2·47 per 1,000; diseases of the nervous system 86 cases, or 2·00 per 1,000, of which 55 cases, or 1·28 per 1,000, were mental affections; debility 40 cases, or ·93 per 1,000; malarial fever 30 cases, or ·70 per 1,000; tubercular diseases 26 cases, or ·60 per 1,000; diseases of the organs of locomotion 24 cases, or ·56 per 1,000; diseases of other organs of special senses 21 cases, or ·49 per 1,000; diseases of the digestive system 18 cases, or ·42 per 1,000, and injuries 17 cases, or ·39 per 1,000. Compared with corresponding ratios in the preceding year, a decrease has occurred in most of the rates ranging from ·02 for diseases of the skin, to ·61 for debility; increase is observed in a few instances, among these may be noticed ·27 for rheumatism, and ·18 for malarial fevers, and diseases of the lymphatic and glandular system respectively.

*Officers.*—The average strength of the officers was 1,237, among whom there were 9·21 cases of illness with 17 deaths, and the number invalided was 77, giving a ratio of 744·5 for sickness, of 13·74 for mortality and of 62·24 for invaliding; and comparing very favourably with the corresponding ratios of the preceding year, being lower by 315·8, 11·39, and 2·24 respectively. 4 cases of eruptive fevers, one each of small-pox, cow-pox, measles, and scarlet fever occurred. Enteric fever was the cause of 38 cases of illness and of 10 deaths; in the previous year 41 cases and 8 deaths were recorded. The ratio of cases to strength was 30·7, and that of deaths 8·08 per 1,000, against 34·3 and 6·70 in the preceding year, and 25·0 and 6·42, the corresponding ratios for the non-commissioned officers and men in the present year. The per-centage of mortality to attack was 26·3, as compared with 19·5 in the previous year, and

25.6 that for the non-commissioned officers and men. The cases were distributed over 20 stations against 24 in 1892, viz., Meerut, 4 and 2 deaths; Rawalpindi, 4 and 1 death; Lucknow, Umballa, and Murree, 3 cases each, no deaths; Agra, 2 cases with 2 deaths; Naini Tal and Ferozepore, 2 and 1 death; Fyzabad, Bareilly, and Quetta, 2 cases each, no death; a fatal case each at Dum Dum, Amritsar, and Jalna; and a case each at Cawnpore, Shahjahanpur, Chaubattia, Pachmarhi, Jhansi, and Multan. Simple continued fever was the cause of 48 attacks of illness against 115 the year before; and there were no cases of cholera, while there were 9 fatal cases in 1892. Dysentery contributed 32 cases with 1 death, against 45 and no death in the previous year; influenza, 2 cases against 50; and there were 5 cases of mumps against one in the preceding year. Malarial fevers furnished 242 cases (against 344 in 1892), of which 197 were due to ague and 45 to remittent fever. A case of erysipelas and one of delirium tremens are recorded; and venereal affections and debility show the marked decline of 6.4 and 12.1 per 1,000 respectively. 36 cases and 3 deaths are returned under diseases of the respiratory system, against 43 and 1 in the previous year, and include 23 cases of bronchitis; 7 with 2 deaths of pneumonia; 2 each of laryngitis and asthma; one of cirrhosis of lung, and a fatal case of pleurisy. 144 cases and 3 deaths were due to diseases of the digestive system, against 180 and 1 in the preceding year. As usual, diarrhoea and hepatic disorders were the principal causes of illness, having contributed 45 cases each, the latter including 25 instances of congestion of liver, 11 of hepatitis, 6 of hepatic abscess, of which one was associated with dysentery and one with typhlitis and peritonitis, and 3 cases of jaundice. The 3 deaths were from hepatic abscess; one of these being associated with typhlitis. Of the 21 cases returned under diseases of the organs of locomotion 17 were of synovitis, while boils and ulcers formed the largest numbers of the 35 cases under skin diseases. There was one case of sunstroke, which ended in recovery, and of the 166 cases included under local injuries, and giving a ratio of 134.2, a decrease of 9.9 per 1,000; there were besides the usual proportion of cases of contusions, wounds, and sprains, 4 instances of gunshot wounds, 23 of fractures, 7 of concussion of the brain, and 2 of concussion of cord; no fatal cases being noted, against 6 deaths in 1892. Of the 77 officers invalided 12 were for enteric fever, 5 for dysentery, 8 for malarial fevers, 12 for debility, 2 for mental diseases, 2 for pneumonia, 2 for diarrhoea, 13 for hepatic affections, 2 for fractures, and the remaining 19 for simple continued fever, rheumatism, non-malignant new growth, congestion of brain, valvular disease, palpitation of heart, laryngitis, asthma, cirrhosis of lung, obstruction of the gall-bladder, splenitis, albuminuria, urinary fistula, periostitis, synovitis, contusions, gunshot wounds, wounds and injuries of parts within the orbit, and concussion of cord respectively.

**Women.**—The average strength of the women was 1,722; the number of admissions amounted to 1,373, and there were 28 deaths; the equivalent ratios being 797.3 and 16.26 per 1,000, as compared with 893.1 and 24.46 respectively in the preceding year. The 3 cases (no death) of eruptive fevers returned, included one of small-pox (at Rawalpindi), against 3 cases and one death the year before, and 2 of measles, against the same number in 1892. Enteric fever caused 17 admissions and 5 deaths (against 13 and 5 in the previous year), of which 4 cases with one death happened at Meerut; 3, no death, at Rawalpindi; a fatal case each at Ranikhet, Delhi, Khya-Gali, and Cherat; also a case each at Bareilly, Chakrata, Umballa, Dagshai, Murree, and Quetta. Of simple continued fever there were 31 cases against 67 in 1892; and of cholera 2 with a death, against 10 cases and 7 deaths the year before. Dysentery caused 22 admissions, but no death. Malarial fevers, which included 297 admissions for ague, 15 with 2 deaths for remittent fever, and 13 for malarial cachexia gave an admission rate of 188.7 against 206.5, and a mortality ratio of 1.16, which was about half that of the preceding year. Under septic diseases are included 4 cases of puerperal septicæmia with 3 deaths, and one case of erysipelas; 6 cases and 2 deaths being the numbers recorded in 1892 under this head. The number of admissions under debility amounted to 389, as compared with 452 in the preceding year; and there were 16 cases of rheumatism, 7 cases with one death from tubercle of the lung, and 38 of anæmia, no death; in the preceding year there were 21, 1, and 33

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cases, with a death each, under the three last-named diseases respectively. 33 admissions and 5 deaths were due to diseases of the nervous system, against 37 and one death in the year before, of these 18 were cases of neuralgia, 4 of epilepsy, 3 each of hysteria and vertigo, two fatal cases of inflammation of the brain and its membranes, a fatal case each of puerperal eclampsia and puerperal insanity, a case of melancholia, and a death out of hospital from apoplexy. Of the 29 cases of ophthalmic disease, 24 were due to conjunctivitis, and of the 8 cases and one death under diseases of the circulatory system (against 11 and 2 in the previous year), 3, with the fatal case, were of valvular disease of the heart; while for diseases of the respiratory system 50 admissions and one death are recorded (against 66 and 4 in 1892), 34 being for bronchitis, 4, with the death, for pneumonia, 3 each for asthma and pleurisy, and 2 for laryngitis. Diseases of the digestive system accounted for 192 admissions and 4 deaths, the numbers in the preceding year having been 212 and 5 deaths, giving a decline of 9.1 and .52 per 1,000 respectively. The principal causes of the admissions were dyspepsia 57, diarrhoea 54, and hepatic disorders 22; the deaths having been due to ulceration of the stomach, abscess of the liver, peritonitis, and puerperal peritonitis. Diseases of the generative system contributed 151 cases, 4 fatal (against 148 and 4 deaths in 1892). Of the 4 deaths, 3 were from sudden death after delivery, and one from postpartum hæmorrhage.

*Children.*—The average strength of the children was 3,076, the admissions among whom numbered 1,709 and the deaths 133, being in the ratios of 555.6 and 43.24; the former exceeded the previous year's ratio by 38.8, while the latter was a satisfactory decline of 13.84 per 1,000. There were only 47 admissions for eruptive fevers with no mortality, as compared with 110 and 3 deaths in 1892; the cases comprised 20 of chicken-pox, 24 of measles, and 3 of epidemic rose-rash, cases of small-pox being absent from the record of the year. 95 cases, 4 of which were fatal, are returned for whooping cough, against 40 and 3 deaths in the previous year; one fatal case of diphtheria, against two in the year before, and 13 of mumps and one of influenza, against one and 7 respectively in the preceding year. Enteric fever caused 9 admissions and 3 deaths, or 6 admissions and 2 deaths less than in the year before; Kasauli furnishing 2 cases; Bareilly, Meerut, and Rawalpindi, a fatal case each; and Lucknow, Shahjahanpur, Ranikhet, and Nowshera respectively the remainder. Simple continued fever contributed 93 admissions, against 126 with 3 deaths in 1892, and dysentery 44 cases, 2 fatal, against 24 and 2 deaths, no cases of cholera being recorded, while there were 8 fatal cases in the preceding year. The admissions for malarial fevers amounted to 342, and there were 10 deaths; the ratio of the former, 111.2, being in excess of that of the year before by 3.3, while that of the latter, 3.25, was lower by 1.43 per 1,000. 315 of the admissions with 4 deaths were due to ague, 17 with 4 deaths to remittent fever, and 10 cases, 2 fatal, to malarial cachexia. Erysipelas gave 2 admissions and a death, and 6 cases, 2 fatal, are returned under congenital syphilis, as compared with 2 fatal cases of the former disease, and 5 admissions with 3 deaths for the latter recorded in the preceding year. 11 cases, the same as in 1892, are returned under parasitic diseases; and 146 cases and 23 deaths under developmental diseases against 159 and 31 the year before; of these 134 cases, 14 fatal, were due to debility, and 8 cases with 9 deaths to immaturity at birth; 11 admissions for anæmia, 6 for scrofula; 4 fatal cases of tubercular disease were the most important of those making up the remaining cases under general diseases. Coming next to local diseases, 39 admissions and 24 deaths are founded recorded under affections of the nervous system, against 58 and 32 in the previous year; of these, 26 cases with 19 deaths were of infantile convulsions; 4, one fatal, of laryngismus stridulus; 3, all fatal, of inflammation of the brain and its membranes; a fatal case of myelitis and 2 cases of epilepsy. All the 99 admissions for diseases of the eye are returned under conjunctivitis, and the single case under diseases of the circulatory system was a fatal one of thrombosis of artery. For diseases of the respiratory system the admission ratio, 79.2 per 1,000, representing 244 cases, gives the notable increase of 19.1 per 1,000, and there were 24 deaths, against 23 in the preceding year. These included 215 admissions for, and 9 deaths from, bronchitis, 20 cases of pneumonia, 10 proving fatal, 6 of croup with 4 deaths, 2 of laryngitis, one of which ended

fatally, and a case of pleurisy, which was still under treatment at the end of *Bengal*. the year. The ratio of admissions for diseases of the digestive system, 109·6, was also an important increase of 22·9 per 1,000 on that of the preceding year, but that of mortality 9·43 was a decline of ·86 per 1,000.

The number of admissions amounted to 337, of which 179 were for diarrhoea, and 85 were cases of dentition, and of the 29 deaths recorded 18 were from diarrhoea, 6 were due to teething, 3 to inflammation of the intestines, and one each to typhlitis and hernia. Nothing noteworthy is recorded under the remaining heads, except that there were 4 cases of heat apoplexy (3 fatal), an admission and a death under asphyxia from overlying, and 11 cases of fracture with a death.

**SANITARY CONDITIONS.**—The following points regarding the health of the troops and the sanitary condition of the different districts and stations are taken from the reports of the Principal Medical Officer, Surgeon Major-General A. F. Bradshaw, C.B.

**Presidency District.**—Fort William.—The general sanitary condition was satisfactory. Certain measures designed to remedy the defects reported last year in the Ravelin quarters have been carried out. It is now recommended that the municipal water supply be laid on to the Station Hospital, and it is hoped that this will be done during the current year. **Dum Dum.**—The district Principal Medical Officer remarks: "The presence of native villages in the vicinity of the cantonment is a source of danger to the health of the garrison. Representations have been made for their removal, but as yet no steps have been taken in that direction." The medical officer in charge writes regarding the same subject: "There are numerous little villages in cantonments which have the anomalous position of being out of cantonments, and are therefore not amenable to cantonment law . . . they are increasing in size, and are a source of danger on account of their filthy surroundings and the dirty habits of the inhabitants." He further remarks that "the tanks in and around Dum Dum and the drains which run through cantonments are receptacles for filth of all descriptions, and make Dum Dum one large incubator of micro-organisms." **Barrackpore.**—It is reported that the sanitary condition throughout the year was satisfactory. **Darjeeling.**—The District Principal Medical Officer reports that the ventilation of the guard-room and cells has been improved. He states that the mixture of coal and wood issued for warming purposes was an improvement on wood by itself, there was less smoke, and that the medical officer in charge recommends a still larger proportion of coal (at present 1 to 3). Charcoal was issued instead of wood for cooking hospital diets with very satisfactory results. The district Principal Medical Officer recommends that urinals constructed of galvanised iron be supplied in place of those now existing, which are made of wood and are out of repair. **Gnathong.**—Daily issues of the following extra ration were continued as during the previous year, in consideration of the climatic conditions of such an altitude—12,000 feet above sea level. September to May:  $\frac{1}{2}$  lb. bread,  $\frac{1}{4}$  lb. fresh meat, 1 oz. cocoa. June to September: the extra issue of bread was reduced to  $\frac{1}{4}$  lb., the other items continued the same.

**Allahabad District.**—Allahabad.—The general sanitary condition is reported to have been very satisfactory during the year. **Benares.**—At this station also there were not any sanitary defects of importance reported. **Dinapore.**—The Medical Officer reports that the sanitary condition is not satisfactory. He considers the latrine accommodation provided for the native population of cantonments is not sufficient, and that the existing masonry structures should be replaced by movable latrines of metal. The question of improving the sanitary condition of Dinapore has long been under consideration, and it is hoped that during the present year the necessary steps will be taken to put the station into a satisfactory state.

**Oudh District.**—Lucknow.—The District Principal Medical Officer objects to the disposal of bath-room water into "absorption pits," he considers open drains would be preferable. A drain from the artillery stables, and which flows into a main drain (nullah) near the British cavalry lines, was at one time found to be in a dirty condition. The whole ground between the cavalry lines and the regimental bazar being cut up by ditches, natives resort to them



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for performing the functions of nature; stagnant water remains in them for some time after the cessation of the rains. From one of these stagnant pools Mr. Hankin, Chemical Examiner and Bacteriologist to Government North-West Provinces, obtained the enteric fever bacillus. The necessary steps were taken to improve the above-mentioned drain, and to, as far as practicable, prevent the fouling of the ditches. The District Principal Medical Officer remarks that, though water from the wells in cantonments appears good when tested chemically, it is not above suspicion bacteriologically, and he anticipates a very beneficial effect on the health of the troops by the impending extension of the municipal waterworks into cantonments. The hospital accommodation continues deficient, barrack-rooms and tents having to be used for the sick. Sitapur.—The District Principal Medical Officer does not approve of the "absorption pits." Three barracks for single men were constructed during the year. Cawnpore, Fyzabad, Fatehgarh.—At none of these stations were any sanitary defects of importance brought to notice.

*Rohilkhand District.*—Bareilly.—The general sanitary condition is reported as having been satisfactory, but the District Principal Medical Officer disapproves of the "absorption pits." He also remarks on the deficiency of the hospital accommodation. Shahjahanpur.—The District Principal Medical Officer, as at other stations in the district, considers the "absorption pits" objectionable. Moradabad.—The general sanitary condition of the station was satisfactory. Naini Tal.—The District Principal Medical Officer objected to the latrines at Tulli Tal having thatched roofs, as he considered them liable to retain the contagia of cholera and enteric fever. Ranikhet.—The system of distribution of drinking water is reported as being faulty. The water is carried in mule water-bags (massacks) from two good springs. Special bags are set apart for carrying drinking water; but in dry weather, when these springs run low, water has to be obtained from impure sources, and it is found impossible to insure the special bags not being sometimes used for carrying impure water. The medical officer in charge brought to notice that the sanctioned conservancy establishment was not sufficient, and pointed out that it was on the same scale as in the plains, where the roads to the night-soil trenches are level, whereas at Ranikhet they are steep, and the distance is great. Representations on this subject were made, and an extra establishment has been sanctioned. A new hospital block was taken over for occupation on 1st August. Chaubattia.—The general sanitary condition was satisfactory, but the hospital accommodation is not sufficient—tents have to be used to supplement it, and this is inconvenient in the rainy season.

*Bundelkhand District.*—Agra.—The general sanitary condition was satisfactory; but during a special inquiry by the District Principal Medical Officer into the cause of cases of enteric fever among the officers of the British Infantry Regiment, it was ascertained that the water from the filter bed attached to a well, from which all the drinking water for the troops was drawn, contained a large number of microbes. The use of this water was at once discontinued, and arrangements were made for bringing water for drinking purposes in carts from the municipal water supply pending the extension of that supply to cantonments. Jhansi.—Analysis of water from a well, much used in the Sadar Bazar, showed that it was of very bad quality, and consequently the well was closed. The water from a stand pipe near the Railway Institute (a place much frequented by soldiers) was also found to be of bad quality, and was suspected to be the cause of some cases of enteric fever. Measures were adopted to prevent water from this source being used for drinking. During the year the construction of a new station hospital was commenced, and the old hospital was re-roofed with thatch and generally improved, as also were several barracks. Nowgong, Sipri.—At both these stations the general sanitary condition was satisfactory.

*Narbudda District.*—Jubbulpore.—Good water is supplied in pipes from the municipal waterworks, and the general sanitary condition was satisfactory throughout the year, but the hospital accommodation is reported to be deficient. Saugor.—No insanitary condition at this station was brought to notice. Pachmarhi.—Cutting of the jungly growth surrounding the station was continued during the year, and two important sanitary improvements were carried out, viz. :—

1. Sheds were built in the commissariat lines, in which the cows supplying the troops and hospital with milk were sheltered, and were fed and milked under European supervision.

2. The removal of the bullock train *entourage* from the vicinity of the lake and its location within the precincts of the Sadar Bazar.

**Meerut District.**—Meerut.—The Senior Medical Officer writes, "The whole of the drains converge towards the 'Abu Nulla,' which is the main drain of the place; in this the water is often stagnant. It has been recommended that the 'Nulla' be connected with the Ganges canal and periodically flushed from it during the rainless months. This is a very commendable idea, but only a very partial remedy for an evil so long as all its tributaries are left to pollute the air with foul stenches as bad as the Abu Nulla ever gives forth. The surface channels in the military lines are well built, and in these places there is, generally speaking, no want of cleanliness observable." **Muttra, Roorkee.**—The general sanitary condition of both these stations is reported as satisfactory. **Delhi.**—The medical officer, as last year, refers to the insanitary state of the land to the south-east of cantonments. It has not, as yet, been found feasible to put an end to the nuisance complained of. **Landour.**—The sanitary condition of this station was very satisfactory. **Chakrata.**—The medical officer reports that there was some overcrowding in barracks, which, to a considerable extent, was accounted for by the fact that one entire barrack block was handed over to supplement the hospital accommodation. The day rooms in the barracks were all occupied as dormitories. He states that Nos. 12, 13, 14, 15, and 16 barracks are very inadequately ventilated, and that though now occupied by men they were not originally intended for that purpose. He also reports that during the early part of the season the conservancy arrangements were not satisfactory as there was a deficiency of dry earth boxes and scoops, and at Kailana the filth receptacles had ill-fitting covers. Representations were made, and the defects partially remedied.

**Sirhind District.**—Umballa.—The general sanitary condition was satisfactory, but, as reported last year, the bath and latrine accommodation in one block of the station hospital is insufficient. **Dagshai.**—At this station enteric fever was again very prevalent. Careful investigation was made into its possible cause. Samples of the water supply were subjected to analysis, and were reported to be of good quality, and the only insanitary condition which could be said to exist is the trench system of conservancy; for this the land available is limited, and is not capable of efficient cultivation, consequently the soil becomes saturated with sewage. It has been estimated that for seven months in each year  $6\frac{1}{2}$  cwt. of human excrement have been buried daily on the hill side. The drainage from the bath rooms was much improved during the year by the masonry drains being extended down the hill side. **Subathu, Kasauli.**—At both these stations the sanitary condition was reported to be satisfactory. **Solon.**—The hospital accommodation is very deficient. Plans of a proposed new hospital have been approved, and it is hoped that funds for building it will soon be available. **Jutogh.**—At this station the general sanitary condition was very satisfactory.

**Lahore District.**—Mian Mir.—Both the District Principal Medical Officer, and the medical officer in charge, complain of the water supply, which is obtained from the Bari Doab canal, from which it is received into settling tanks, then through filter beds, and is distributed by pipes. The canal is occasionally closed for the purpose of being cleaned; is empty for about one month, and, in its bed, pools form in which natives wash. During the time the canal was closed the water in the reservoirs in cantonments ran low, and the first water passing through the canal was let into them, and was thought to be impure. Representations were made, and it was arranged that after the re-opening of the canal the water should be allowed to flow for several days before being turned into the settling tanks. **Ferozepore.**—General sanitary condition satisfactory; but it is represented that hospital accommodation in a separate building is required in the fort. The present non-dieted hospital is in the same block as the married men's quarters, and this, in the event of epidemic disease, would be objectionable. **Jullundur.**—The well in the hospital compound is said to run dry in the hot season, and it is represented

*Bengal.*

that another well, to be used for the supply of drinking water is advisable. The present well is near the garden, and the soil being porous the water is liable to contamination. Multan.—It is reported that the hospital accommodation is deficient, particularly since the arrival of an extra battery. The bath-room accommodation in hospital is also deficient—there are not any private ablution rooms. Amritsar.—The general sanitary condition was satisfactory, but the very faulty condition of the western end of the hospital continues the same as already referred to in annual reports. Dalhousie.—At this station no sanitary defects of importance were brought to notice. The hospital accommodation is not sufficient, but is supplemented by one of the barrack blocks, which it is proposed to permanently appropriate for the sick. Bhagsu.—The water supply is said to be pure at its source, but liable to contamination in the open channel in which it is brought into the station.

*Rawalpindi District.*—Rawalpindi.—During the year the new water supply was completed and is now in full working order; the sanitary condition is generally satisfactory. Sialkot.—The surface drainage is reported to be very faulty, but owing to the level nature of the station and surrounding country it is impossible to remedy matters. Attock.—No sanitary defect of importance at this station was brought to notice. Campbellpore.—The general sanitary condition was satisfactory. The hospital lavatory was much improved during the year, pipes with taps were laid on, and separate private bath rooms built. Murree.—Considerable progress was made with the laying of pipes for the new water supply, from which much benefit to the health of the troops is anticipated. Kuldana.—The hospital accommodation is not adequate, but the general sanitary condition is satisfactory. The night soil is carried down the hill-side on a wire tramway and buried at a considerable distance from the station. Gharial.—At this station the general sanitary condition was satisfactory, but the hospital accommodation is deficient. Baragali, Khyragali, Kalabagh, Thobba, Lower Topa.—At none of these small stations which are in the Murree Hills, and are occupied only during the summer months, were any sanitary defects of importance brought to notice.

*Peshawar District.*—Peshawar.—At this station the general sanitary condition was satisfactory, and the general health of the troops was better than during the previous year. Nowshera.—The district Principal Medical Officer recommends that masonry drains be constructed to carry the bath-room water some distance from these buildings. Cherat.—The Medical Officer considers the Bazar site too cramped and the latrine accommodation insufficient. He reports that a scheme for the provision of movable latrines has been sanctioned and is to be carried into effect this year. Hospital accommodation for the soldiers' families is much required; that for men is supplemented by the use of tents which are not, however, suitable for women and children.

The Medical Officer writes:—

“Proper kitchens provided with meat safes are urgently required. During the first part of the season, the cooking was done in the open air, and the food was exposed to swarms of flies, which may very possibly carry the germs of disease.”

*Quetta District.*—Quetta.—Several improvements were carried out during the year. Two new barracks for 26 men each of the Garrison Companies were built. Shutters were affixed to the ridge ventilation of barracks. The officers' quarters were generally improved. Some of the barrack rooms have been floored with slate, but many more require this improvement, also some wards of the station hospital.

## II.—MADRAS.

*Madras.*

The average strength of warrant officers, non-commissioned officers and men during the year was 13,349, an increase of 167 on the number during the previous year.

The following table shows the more important of the health statistics of the troops during the year :—

1893. Average Strength.	Admissions.	Deaths			Invalids		Average constantly Sick.	Ratios per 1,000 of Strength.				
		In the Command.	Of Invalids.	Total.	Sent Home.	Finally discharged.		Admissions.	Deaths.	Invalids sent Home.	Invalids finally discharged.	Constantly Sick.
13,349	16,440	125	6	131	350	129	1134.79	1232.2	9.81	26.22	9.66	85.01

Comparing the above with the corresponding results in the preceding year there is an increase of .2 per 1,000 in the admission rate, a decrease of 2.93 in the death rate, and an increase of 1.68 in the constantly sick rate. Compared with the average ratios for the previous decennium there is a decrease in the admission rate of 44.6 and in the death rate of 4.22, but there is an increase of 7.59 in the constantly sick rate. With regard to this decennial comparison it must be pointed out that the figures for the year under report and for the four preceding years include the sickness and mortality among the troops in Upper Burma, which those for previous years did not.

The average sick time to each soldier was 31.03 days, which is longer than the corresponding period in the previous year by .53 of a day, and than the average period for the preceding ten years by 2.77 days. The average duration of each case of sickness was 25.18 days, which is .43 of a day longer than the similar period in the previous year, and longer than the decennial average period by 3.05 days.

The loss to the Command by death and invaliding to England was 475 men, as compared with 596 in the previous year, and the loss to the service by death and final discharge as medically unfit for further service was 260, being in the ratio of 19.47 per 1,000 of strength, a decrease of 6.78 on the corresponding rate in the previous year.

In Abstract XXIV: will be found a table taken from the report of the Principal Medical Officer, which gives the most important of the statistics of sickness and mortality of the different districts and stations in the Command. As regards the districts, the highest admission ratio was in the Mandalay District, 1573.4, an increase on last year's rate of 22.77 per 1,000. The next was 1529.0 in the Madras District, an increase on last year's rate of 317.9. The lowest rate was in the Southern District, 1037.1, an increase of 298.3, as compared with the previous year, the next lowest being 1041.4 in the Secunderabad District, as compared with 1210.9 in 1892. The highest mortality rate was 12.63 in the Rangoon District, an increase of 3.15 when compared with 1892, the next, 12.19, was in the Mandalay District, and shows a decrease of 6.58 when compared with the previous year. The lowest mortality rate was 6.09 in Belgaum and Bangalore, a decrease of 1.04 when compared with 1892, and the next lowest 7.78 in the Southern District, a decrease of 1.43 per 1,000.

With regard to individual stations (with an average strength of not less than 100 men) the highest admission rate was 1763.8 at Mandalay, an increase on the previous year's rate of 222.9 per 1,000; the next highest was 1658.9 at Meiktila, showing a decrease of 115.3. The lowest rates were at Calicut, 922.3, a decrease of 38.1, and at Belgaum 931.3, showing an increase of 74.2. The mortality rate was highest at Calicut, 48.54, against *nil* in 1892. Next came Rangoon with 18.22, showing an increase of 10.60. The lowest mortality rate

*Madras.*

was in the regiment at Wellington, 1·26 a decrease of 8·48 compared with last year. This was followed by Belgau with a rate of 4·04, a decrease of 1·38.

The more important of the statistics of sickness and mortality of the different arms of the service and of the different regiments, batteries, and corps which served in the Command during the year are given in Abstract XLIII. in a table taken from the report of the Principal Medical Officer.

In the cavalry the admission rate was 1373·5, mortality rate 7·91, and constantly sick rate 99·47, showing, compared with 1892, a decrease of 52·2 and 3·86 in the two first-named, but a fractional increase in the last-mentioned. In the artillery the admission rate was 1201·9 per 1,000, death rate 8·65, and constantly sick rate 86·35, an increase in the first and last of 3·4 and ·84, but a decrease in the death rate of 2·73. In the engineers the admission rate was 547·6 and the constantly sick rate 25·95, a decrease when compared with 1892 of 119·1 and 4·05 respectively. There were no deaths. In the infantry the admission rate was 1242·4, the death rate 9·41, and constantly sick rate 82·61. Compared with 1892 there is an increase of 14·0 in the first, a decrease of 2·71 in the second, and an increase of 3·19 in the third.

The following table has been prepared to show as far as possible the influence of age on sickness and mortality among the troops during the year:—

Ages.	Average Strength.	Admissions.	Deaths in Command.	Invaliding.	Ratios per 1,000 of Strength.		
					Admissions.	Deaths.	Invaliding.
Under 20 years -	424	340	3	4	801·9	7·07	9·43
From 20 to 25 years -	7,101	10,521	73	189	1481·6	10·28	26·61
" 25 " 30 " -	4,329	4,700	28	120	1085·7	6·47	27·72
" 30 " 35 " -	1,005	677	11	25	673·6	10·94	24·87
" 35 " 40 " -	368	154	5	9	418·5	13·60	24·45
Over 40 years -	122	57	5	3	437·2	40·99	24·59
Total -	13,349	16,440	125	350	1232·2	9·36	26·22

This shows that the highest admission ratio was between 20 and 25 years of age, being 1481·6. In the previous year this period was also highest, being 1438·9. The lowest rate was in those of 35 to 40. The rates on the whole are very similar to the previous year.

The next table is given to show as far as possible the influence of length of service in the country on the sickness and mortality among the troops during the year:—

Length of Service.	Average Strength.	Admissions.	Deaths.	Invaliding.	Ratios per 1,000 of Strength.		
					Admissions.	Deaths.	Invaliding.
Under 1 year -	3,291	4,306	35	41	1308·4	10·63	12·46
From 1 to 2 years -	2,002	3,737	24	72	1800·6	11·99	35·96
" 2 " 3 " -	1,942	2,597	6	39	1337·3	3·08	20·08
" 3 " 4 " -	1,574	1,686	15	75	1071·1	9·53	47·64
" 4 " 5 " -	1,838	2,131	19	40	1159·4	10·34	26·66
" 5 " 10 " -	2,280	1,773	18	63	784·5	7·97	27·88
" 10 years and upwards -	442	219	8	11	495·5	18·10	24·89
Total -	13,349	16,440	125	350	1232·2	9·36	26·22

The highest admission rate was among men in their second year of service, *Madras*. but in the previous year it occurred among those in their first year. The lowest rate was in those of ten years' service and upwards; the mortality rate was highest in the same period of service; while last year it was highest in those between five and ten years. The lowest rate was in those from 2 to 3 years' service. Last year it was in those from four to five years' service.

The admissions, deaths, invaliding, &c., arranged according to the different groups and orders of diseases are shown in Abstract XXII., and in Abstract XXIII. will be found the sickness and mortality in each of the military divisions.

**GENERAL DISEASES.—Diseases dependent on Morbid Poisons.**—There was no case of *small-pox*, but the admissions under the head of *other eruptive fevers* were 4 in number, against 8 last year. The ratio, '3, compares with '6 in 1892.

*Enteric Fever* contributed 153 admissions and 44 deaths, compared with 154 cases and 40 deaths in 1892, giving ratios of 11·5 admissions and 3·30 deaths against 11·7 and 3·03 respectively for the previous year, and 11·4 and 3·03 the seven years' average. The per-centage of mortality to attack was 28·7 against 26·0 in 1892, and 29·3 the average of the previous seven years. In Abstract XXV. will be found a table taken from the report of the Principal Medical Officer, showing the stations at which the admissions for, and deaths from, enteric fever took place in each of the four quarters of the year. Of the 153 admissions 48 were at Secunderabad, and 16 of them proved fatal. At Madras there were 37 admissions with 8 deaths, and at Bangalore 36 admissions with 5 deaths. At Rangoon there were 13 admissions with 4 deaths. Mandalay gave 6 admissions and 4 deaths, Calicut 3 admissions and 2 deaths, Meiktila and Thayetmyo 2 admissions with one death each, Belgaum, 2 admissions and no deaths; Bhamo, Malapuram, and Wellington 1 admission and 1 death each, and at Pallaveram there was 1 admission and no death.

*Other Continued Fevers* occasioned 697 admissions with no death compared with 819 admissions with 1 death for the previous year, or a ratio of 52·2 admissions against 62·1 admissions and '08 deaths in 1892, and 70·9 and '07 the average rates for the previous 7 years.

*Cholera* caused 1 admission with 1 death compared with 8 admissions and 7 deaths for 1892, giving ratios of '1 admissions and '07 deaths against '6 and '53 respectively for the previous year, and 1·4 and 1·13 the average rates for the previous 7 years. In Abstract XXVI. is a table, taken from the report of the Principal Medical Officer, showing the stations in the Command at which the admissions and deaths from cholera took place in each of the four quarters of the year.

*Dysentery* gave 478 admissions and 8 deaths against 581 admissions with 16 deaths for the previous year, giving a ratio per 1,000 of 35·8 admissions and '60 deaths against 44·1 and 1·21 respectively for last year, and 51·6 and 1·23 the average rates for the previous 7 years. In Abstract XXVII. there is a table taken from the report of the Principal Medical Officer, in which is given the prevalence of dysentery in each of the divisions of the Command, from which it will be seen that of the total admissions for this disease 144 with 2 deaths occurred in the Secunderabad District, giving ratios of 47·0 admissions and '65 deaths, compared with 71·5 and 1·78 respectively for 1892. The Rangoon District gave 125 admissions and 4 deaths, or ratios of 58·5 admissions and 1·87 deaths against 62·7 and 1·58 respectively for the previous year. There were 83 admissions with 1 death in the Belgaum and Bangalore Districts, giving ratios of 23·0 admissions and '28 deaths against 33·7 admissions and '27 deaths for last year. The Mandalay District furnished 42 admissions and 1 death, giving a ratio of 24·4 and '58 respectively against 29·2 admissions and 1·67 deaths for 1892. There were 42 admissions and no deaths in the Madras district, or a ratio of 34·9 against 27·4 for the previous year. The Southern District contributed 42 admissions and no death, giving an admission ratio of 27·2 against 17·3 for admissions and 1·15 for deaths in 1892. The causes were chiefly climatic. In Abstract XXVIII. there is a table showing the prevalence of, and mortality from, this disease in each quarter of the year.

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*Other Diseases of this sub-group.*—Under this heading there were 22 admissions with no death compared with 164 admissions and no death for 1892, giving a ratio of 1·6 per 1,000 compared with 12·4 for the previous year.

*Malarial Fevers* caused 1,899 admissions and 5 deaths compared with 2,293 cases and 13 deaths for last year, or ratios of 142·3 admissions and ·38 deaths against 174·0 and ·99 respectively for the previous year, and 227·8 and 1·15 the average rates for the previous 7 years. Malarial fevers prevailed chiefly in the Mandalay, Rangoon, Bangalore and Belgaum, and Secunderabad Districts. Of the deaths, three were due to ague and two to remittent fever.

*Septic Diseases.*—Under this head there were 4 admissions and no deaths compared with 8 admissions and 1 death in 1892, giving a ratio of ·3 admissions against ·6 admissions and ·08 deaths for the previous year.

*Veneral Diseases.*—There were 2,152 admissions for *primary syphilis*, equal to a ratio 161·2 per 1,000, which is higher than in the previous year by 30·9, and than the average rate of the preceding seven years by 47·7. The average constantly sick rate, 14·17, is higher than in 1892 by 2·17, and than the seven years' average rate by 4·19 per 1,000. Including the sickness from simple venereal ulcer, for which there were 910 admissions and 68·91 constantly sick, the ratio of admissions for primary venereal sores was 229·4 per 1,000, which is higher than in the previous year by 46·2, and than the average of seven years by 51·9 per 1,000. The ratio of constantly sick was 19·33 per 1,000, which is higher in the above comparisons by 3·12 and 4·87 respectively. *Secondary syphilis* caused 1,142 admissions and 1 death, being that of an invalid, or an admission ratio of 85·6 as compared with 74·0 in 1892, and 57·2 the average rate of the previous seven years. The ratio of constantly sick was 10·30 per 1,000, an increase in the above comparisons of 1·59 and 3·96 respectively. *Gonorrhœa* caused 2,243 admissions, and there were 175·32 men constantly sick. The ratios equalled 168·0 and 13·13 per 1,000, and were above the previous year's rates by 39·3 and 3·66, and the average rates of seven years by 24·6 and 2·67 respectively. Including all forms of venereal disease the total admission rate was 483·0, and the total constantly sick rate 42·76 per 1,000. Compared with 1892 there is an increase of 97·1 in the former and of 8·37 in the latter, and in comparison with the average rates for the previous seven years there is also an increase of 104·9 and 11·50.

The comparative prevalence of venereal diseases, not including simple venereal ulcer in the different districts, is given in Abstract XXIII. With regard to primary syphilis, it is shown that the highest ratio was 184·6 per 1,000 in the Mandalay District, the next being 172·9 in the Southern District; the lowest ratio was 148·5 in the Secunderabad District, the next above being 156·8 in the Rangoon District, and 161·9 in the Madras District. In the preceding year the highest and lowest ratios were in the Rangoon and Madras Districts. Compared with the previous year's return a decrease has occurred, equal to 13·8 per 1,000 in the Rangoon District, but an increase is observed in the ratios for all the other districts varying from 129·6 in the Madras District, and 90·1 and 70·3 in the Southern and Mandalay Districts respectively to 19·6 in the Bangalore and Belgaum Districts, and ·2 in the Secunderabad District. The highest ratio of prevalence of secondary syphilis was 119·6 per 1,000 in the Madras District, the next being 104·3 in the Bangalore and Belgaum Districts, 88·9 in the Rangoon District, 73·1 in the Mandalay District, 61·4 in the Secunderabad District, and 51·9 in the Southern District. The last-named district also furnished the lowest ratio in 1892, when the highest rate occurred in the Rangoon District. Compared with corresponding ratios in the preceding year, a decrease of 13·5 has occurred in that for the Rangoon District, while those for all the other districts show an increase equal to 58·0 in the Madras District, 26·6 in the Southern District, 24·3 in the Bangalore and Belgaum Districts, 23·0 in the Mandalay District, and 3·1 in the Secunderabad District. *Gonorrhœa* gave the highest rate of prevalence, 203·3 per 1,000, in the Madras District, followed by 182·8 in the Mandalay District, 176·2 in the Bangalore and Belgaum Districts, 167·1 in the Rangoon District, 155·6 in the Southern District, and 155·0 in the Secunderabad District. In the previous year the district last mentioned furnished the highest ratio, and the Southern District the lowest. In all the districts the ratios are higher than in the year preceding, the increase being equal to 91·2 per 1,000

in the Madras District, 61·2 in the Southern District, and 56·8, 48·4, 31·3 and 1·0 in the Mandalay, Bangalore and Belgaum, Rangoon, and Secunderabad Districts respectively. Taking all the above forms of venereal disease together, the highest ratio of admission in any district was 484·8 in the Madras District, followed by 448·1 in the Bangalore and Belgaum Districts, 440·5 in the Mandalay District, 412·3 in the Rangoon District, 380·4 in the Southern District, and 364·9 in the Secunderabad District. In the preceding year the highest ratio was in the Rangoon District, and the lowest in the Southern District. Compared with corresponding ratios for 1892, an increase has occurred in the ratios of all the districts, being as much as 278·8 per 1,000 in the Madras District, followed by 177·9 in the Southern District, 150·1 in the Mandalay District, 92·3 in the Bangalore and Belgaum Districts, and 4·3 and 4·2 respectively in the Secunderabad and Rangoon Districts. In the depôts the ratio of admission for these diseases was 347·9 per 1,000.

*Parasitic Diseases* caused 52 admissions, or a ratio of 3·9 compared with 3·3 for last year. Of the admissions *tænia solium* caused 48, *ascaris lumbricoides* 2, and *filaria mediensis* and *oxyuris vermicularis* 1 each.

*Alcoholism*.—There were 94 admissions and 1 death under this head, of which 7 cases and the death were caused by *delirium tremens*, giving a ratio of 7·0 for admissions, and one of ·07 for deaths, against 4·4 and ·08 respectively for the previous year.

*Debility* caused 265 admissions with no deaths or a ratio of 19·9 per 1,000 against 26·5 admissions and ·15 deaths for last year, and 30·7 and ·11, the seven years' average rates.

*Rheumatism* occasioned 448 admissions and 1 death, being in the ratios of 33·6 and ·07 compared with 40·0 and ·15 respectively for the previous year, and 32·7 and ·05 the average rates for the previous seven years. Eleven of the admissions, including the fatal case, were due to rheumatic fever.

*Tubercular Diseases* caused 46 admissions and 8 deaths, or a ratio of 3·4 for admissions and one of ·60 for deaths, against 2·2 and ·76 respectively for last year, and 2·9 and ·73 the average rates for the previous 7 years. Tubercular disease of the lung gave rise to 44 of the admissions and 7 of the deaths, the other death being due to tubercular meningitis. The Depôts gave a ratio of 15·9; the Rangoon District, one of 9·8; the Madras District, one of 4·6; the Southern District, one of 2·6; the Bangalore and Belgaum Districts, one of 1·6; and the Secunderabad District, one of 1·0. Of the 8 deaths 1 occurred at each of the following stations: Madras, Poonamallee, Bellary, Wellington, Calicut, Rangoon, Thayetmyo, and Meiktila.

*Other Diseases* of this group furnished 259 admissions and 1 death, or a ratio of 19·4 for admissions and one of ·07 for deaths compared with 11·8 and ·03 respectively for 1892. The death was due to malignant new growth.

**LOCAL DISEASES.**—*Diseases of the Nervous System*.—There were 154 admissions with 7 deaths, including that of an invalid. Of these, 130 admissions and 5 deaths were due to nervous diseases, and 24 admissions and 2 deaths (one an invalid) to mental disorders, giving ratios of 9·7 admissions and ·38 deaths for the former, and of 1·8 and ·15 respectively for the latter, compared with 12·7 admissions and ·53 for nervous diseases and 1·3 admissions and ·08 deaths for mental disorders for 1892. Neuralgia caused 93 admissions, vertigo 11, epilepsy 2, hæmiplegia 4, hysteria 3, inflammation of brain and its membranes 2, inflammation of cerebral membranes 3, megrim 2, tetanus, glosso-labio-pharyngeal paralysis, and somnambulism 1 each, dementia 9, mania 8, melancholia 6, and insanity 1. Three deaths occurred from inflammation of the cerebral membrane, 1 from inflammation of brain and its membranes, 1 from apoplexy, 1 from mania, and that of the invalid from insanity.

*Diseases of the Eye* occasioned 158 admissions, giving a ratio of 11·8 per 1,000 as compared with 11·9 for the previous year. The chief affections were conjunctivitis 125, iritis 6, and ulcer of cornea 5 cases.

*Diseases of other Organs of Special Senses*.—There were 193 admissions, or a ratio of 14·5 per 1,000 against 13·3 for last year. Inflammation of the external meatus caused 164 admissions, perforation of the *membrana tympani* and inflammation of middle ear 7 each, and abscess of the external meatus 6.

*Diseases of the Circulatory System* occasioned 91 admissions and 4 deaths, or a ratio of 6·8 for admissions and of ·30 for deaths, compared with 5·5 for



*Madras.*

admissions and 23 for deaths for 1892, and 8.2 and .42 the average rates for the previous 7 years. Of these, palpitation caused 46 admissions, valvular disease of the heart 21, hypertrophy of the heart and varix 5 each. Valvular disease of the heart caused 2 deaths, and dilatation of heart and aneurysm of the aorta 1 death each.

*Diseases of the Respiratory System* caused 304 admissions and 6 deaths, or a ratio of 22.8 for admissions and .45 for deaths against 29.6 and .45 respectively for last year, and 27.1 and .76 the average rates for the previous 7 years. The chief affections were bronchitis 262 cases, pneumonia 16 admissions with 3 deaths, pleurisy 11 admissions, spasmodic asthma 8, chronic pneumonic phthisis 2 admissions and 1 death, and hæmoptysis 2 and 1 death. There was also a death from abscess of lung.

*Diseases of the Digestive System.*—Under this heading there were 1,348 admissions and 22 deaths, three being those of invalids after leaving the Command, giving a ratio of 100.9 for admissions and one of 1.65 for deaths compared with 115.2 and 2.12 respectively for the previous year, and 136.8 and 2.45 the average rates for the previous seven years. Of these, catarrhal inflammation of the intestines occasioned 250 admissions, congestion of liver 246, sore-throat 156, follicular tonsillitis 128, catarrhal inflammation of the stomach 63, dyspepsia 54, piles 69, hepatitis 78, and abscess of liver 17 admissions, 8 of the latter being associated with dysentery. Abscess of liver associated with dysentery caused 9 deaths, abscess of liver 6, abscess sub-peritoneal tissue 2, peritonitis 1, and obstruction of intestines 1. The deaths of the invalids were due to abscess of liver 2 cases, and inflammation of liver 1 case.

The Mandalay District furnished the highest ratio of admissions for diseases of this class, the ratio being 141.0 admissions and 1.17 deaths, followed by the Madras District 110.4 admissions and 1.84 deaths. Rangoon District 107.2 admissions and 2.81 deaths, Bangalore and Belgaum Districts 98.5 admissions and 1.38 deaths, Secunderabad District 80.2 admissions and .98 deaths, and the Southern District 79.5 admissions and *nil* deaths.

In Abstract XXVII. is a table showing the prevalence of, and mortality from, diarrhoea, and hepatitis, and abscess of the liver in each of the divisions of the Command during the year, and in Abstract XXVIII. there is a table showing the prevalence of, and mortality from, these diseases in each quarter of the year.

*Diseases of the Lymphatic and Glandular System* caused 440 admissions and no deaths, or a ratio of 32.9 admissions compared with 53.3 admissions and .08 deaths for last year. Of these, inflammation and suppuration of the lymphatic glands caused 421 admissions, and enlargement of the spleen 5.

*Diseases of the Urinary System.*—Under this heading there were 17 admissions and one death, being that of an invalid after leaving the Command, giving ratios of 1.3 admissions and .07 deaths against 3.0 admissions and .23 deaths for the previous year, and 3.0 and .15 the septennial average rates. There were 5 admissions for inflammation of bladder, 4 for acute nephritis, and 3 each for Bright's disease and incontinence of urine. The death was due to Bright's disease.

*Diseases of the Generative System* occasioned 1,107 admissions or a ratio of 82.9 admissions per 1,000 compared with 71.0 for the previous year, and 85.2 the average rate for the previous 7 years. Simple venereal ulcer caused 910 admissions, orchitis 133, balanitis 28, varicocele 12, hydrocele 5, and phimosis and epididymitis 3 each.

*Diseases of the Organs of Locomotion* caused 96 admissions, giving a ratio of 7.2 admissions against 8.1 for last year. Of the cases treated 64 were for synovitis.

*Diseases of the Connective Tissue.*—Under this heading there were 287 admissions or a ratio per mille of 21.5 against 18.8 for the previous year. Abscess of the connective tissue caused 226 admissions, and inflammation of the connective tissue 61.

*Diseases of the Skin* caused 869 admissions, giving a ratio of 65.1 compared with 61.4 for last year, and 71.0 the average rate for the previous 7 years. The chief affections were boils 266, ulcer 223, eczema 86, ringworm 69, whitlow (including onychia) 87, and itch 48 cases.

*Poisons* caused 7 admissions, all due to poisoned wounds, or a ratio of '5 against '5 admissions and '08 deaths for the previous year. Of these, 5 admissions were due to stinging insects, 1 to horsebite, and 1 to snakebite. There was no death.

*General Injuries* caused 14 admissions and 13 deaths or a ratio of 1:1 for admissions and one of '98 for deaths as compared with 1:4 and 1:06 respectively for the previous year. Of the deaths 7 were from asphyxia from submersion (accidental), 3 from heat apoplexy, 2 from multiple injury (one man being accidentally killed by a train and the other by a fall from a verandah) and 1 from lightning stroke.

*Local Injuries.*—There were 1,372 admissions and 8 deaths, or an admission ratio of 102:8 and a death rate of '60, against 96:0 and '30 respectively for 1892. The deaths were, one each from contusion of abdomen; concussion of brain; wound of rectum penetrating; cut throat, suicidal; gunshot wound, suicidal; fracture of skull; fracture of ribs, with lung injury; and rupture of artery (left middle meningeal). The details of these cases are as follows:—

A private of the 19th Hussars died at Bangalore from "contusion of abdomen," caused from being thrown from his horse and kicked.

A sub-conductor of the Barrack Department died at Bangalore from "concussion of the brain," caused by the upsetting of a dog-cart which he was driving and whilst attempting to turn a corner too sharply.

A driver, 5th Field Battery, Royal Artillery, died at Saint Thomas' Mount from penetrating wound of rectum followed by peritonitis. The wound was caused by his falling backwards into a bush.

A lance-corporal, 2nd Battalion, Suffolk Regiment, committed suicide at Secunderabad by cutting his throat with a razor whilst in hospital under treatment for enteric fever. The verdict was that he was in a state of temporary insanity when he committed the act, motive unknown. A private, 1st Battalion, Cheshire Regiment, shot himself through the head with a Lee-Metford rifle at Belgaum. The lips were torn and blackened. The exit wound was behind, slightly to the left of the middle line on a level with the top of the ear. The exit wound was small, only sufficiently large to permit the passage of the bullet. No brain matter protruded from the orifice, but the hæmorrhage was very great. The lower jaw was broken in several places. The two superior maxillary bones were torn apart, the rent extended backwards through the whole length of the hard and soft palates. The basilar process of the occipital bone was split, the fracture extending backwards into the foramen magnum and forwards through the body of the sphenoid. It then bifurcated and a line of fracture passed through each orbital plate of the frontal bones, terminating near the coronal suture. The coroner's verdict was that "he shot himself while in a state of temporary insanity." No motive could be assigned for the act. A sergeant, 21st Hussars, died at Secunderabad from fracture of the base of skull, caused by a fall from his horse while at exercise, and a private, 19th Hussars, died at Bangalore from fracture of the ribs, caused by being violently thrown from his horse against a tree.

A lance-corporal, 2nd Battalion, Royal Scots, died at Calicut from rupture or left middle meningeal artery. While running he came into collision with another man who was also running, receiving a severe blow behind the left ear from the other man's forehead. He was knocked down and bled freely from the left ear. On post-mortem examination a firm bright clot, the size of a hen's egg, was found between the dura mater and the skull, in the left temporal region, and this was discovered to have its origin from a rupture of the left middle meningeal artery at its point of exit from the foramen spinosum, careful dissection revealed no fracture of the skull.

*Surgical Operations.*—Twenty-one primary operations were performed, all of which were successful, one for amputation of first phalanx of great toe for caries, two for amputation of toes for deformity from corns, one excision for myxoma of leg, one for removal of lipoma from axilla, one for removal of sebaceous tumour from the floor of mouth, and fifteen minor operations for phimosis, &c.

*Invaliding.*—There were 350 men invalided home, giving a ratio per 1,000 of 26:22, compared with 33:15 for the previous year, the average for ten years being 28:97. In Abstract XLII. will be found the invaliding ratios for the different arms of the service, and also of the several corps that served in the

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Command during the year. In previous tables are shown the effects of age, and service in the country, on invaliding. The chief causes of invaliding were secondary syphilis 104 cases, debility 33, anæmia 17, dysentery 15, valve disease of heart 13, and rheumatism and hepatitis 10 cases each. The invalids finally discharged the service were 129 in number, giving a ratio of 9·66 per 1,000. This is a decrease of 3·84 on the rate for 1892 and of 4·51 on the decennial average rate. The principal disabilities necessitating discharge were secondary syphilis 9 cases, debility 10 cases, rheumatism 9 cases, nervous diseases 9 cases, mental diseases 12, diseases of the circulatory system 20, and injuries 9 cases.

*Officers.*—The average annual strength was 406 compared with 394 for the previous year. There were 310 attacks of illness among them, 4 deaths, and 48 officers were invalided, giving ratios per mille of 763·5, 9·85, and 118·22 respectively. A decrease in the rate of sickness is observed of 223·8, of deaths 5·38, and of invaliding 39·14, as compared with the previous year. The chief causes of admission were simple continued fever 32 cases, ague 31, dysentery 21, contusion 17, debility and sprain 13 each, and catarrhal inflammation of intestine, remittent fever, and congestion of liver 9 cases each.

There was one death from each of the following causes:—poisoned wounds (inflicted by a tiger), abscess of liver, enteric fever, and cholera.

*Women.*—The average annual strength was 777, there were 558 admissions and 6 deaths, being in the ratios of 718·1 and 7·72 per 1,000, showing a decrease of 258·1 in the admission rate and of 5·52 in that of mortality as compared with the previous year. The chief causes of admission were debility 212 cases, anæmia 32, bronchitis 20, simple continued fever 18, dysentery and ague 17 each, &c. Tubercle of lung caused 2 deaths, and remittent fever, septicæmia, metritis, and carbolic acid poisoning (accidental), one death each.

*Children.*—In an average annual strength of 1,435 there were 787 admissions and 54 deaths, or an admission ratio of 548·4 and a death rate of 37·63, compared with 652·4 and 30·13 respectively for last year.

The chief causes of admission were bronchitis 153 cases, conjunctivitis 95 cases, debility 66, teething 55, ague and whooping cough 52 each, and simple continued fever 45 cases. The deaths were due to the following causes:—infantile convulsions 11 cases, teething 6 cases, bronchitis, dysentery, and tubercular diseases 5 each, debility 4, remittent fever 3, pneumonia 3, whooping cough and inflammation of intestine (catarrhal) 2 each, and ague, enteric fever, secondary syphilis, immaturity at birth, croup, intussusception, peritonitis, and diphtheria 1 case each.

*SANITARY CONDITIONS.*—The following remarks on the health of the troops and the sanitary conditions of the different districts and stations are taken from the report of the Principal Medical Officer, Surgeon-Major-General T. Walsh:—

*Bangalore and Belgaum Districts.*—The general health of the troops in these districts has been good. The sanitation of the barracks and buildings have been attended to. *Bangalore.*—The parade or infantry barracks for British troops are situated to the north of the cantonment. To the south-east are the artillery and cavalry barracks. The accommodation in the infantry barracks is only sufficient by using the inner verandahs for sleeping in; this is very unsatisfactory. There has been some overcrowding in the Hussars barracks, but no special illness has been directly attributed to this. The proximity of the Ulsoor bazaar to the Royal Horse Artillery barracks is always a source of danger, as cholera and other infectious diseases sometimes prevail in the bazaar. The drainage of the barracks is by means of surface drains; all of them lead into one large main drain which ultimately is conveyed by a covered brick sewer past the Ulsoor tank, and out into the country about a mile and a half from the barracks. The Ulsoor tank was the principal source of the water supply, but as the water was pronounced unsafe after repeated analysis, it is now only used by the troops for ablution purposes. Water from the slaughter-house well is used for drinking purposes after being well boiled and filtered. A water scheme (Maligal) has been sanctioned, and when completed, will, it is hoped, render Bangalore a healthier station than it is at present. *North Station Hospital.*—No quarters are provided for the apothecaries attached to this hospital, hence they have to live a long distance away from their work.

Great inconvenience has constantly resulted from this arrangement. There are no quarters for the Army Hospital Corps men, who consequently have to live away in the bazaars. This is very objectionable. A special ward for officers with suitable bath and watercloset arrangements is much needed. Quarters for the nursing sisters within the entrenchment are a very necessary requirement. *Madras.*

**Belgaum.**—The Royal Artillery and new infantry barracks are well constructed, double-storied buildings. The married quarters of both are separate ranges of ground floor buildings, well constructed and ventilated, and provided with cook houses and latrines. One company of the British Infantry Regiment is stationed at the Fort, which lies about  $1\frac{1}{2}$  miles to the east of the cantonment. The general condition of drainage throughout the station is satisfactory. The conformation of the ground waves with the general slope from north-west to south-east, and its natural formation enables surface drainage to be carried out efficiently. The water supply has been obtained from wells which are built of masonry, and well protected from contamination. The supply has generally been abundant and of good quality. The canteens generally have been provided with good English and country brewed beer, and the coffee shops have been stocked with English stores of various kinds and of good quality. The mineral waters are manufactured by each corps under European supervision. The station hospital is situated on rising ground midway between the Artillery and British Infantry barracks, about 300 or 400 yards distant from each. The accommodation is generally sufficient for requirements. A few isolated wards for special cases, and a ward for officers are absolutely necessary, as also a permanent ward for the treatment of infectious cases in lieu of the temporary grass and bamboo hut which now exists, and is very inconvenient, particularly during the rains. The floors of the verandahs of two wards and one latrine are of rammed earth. These floors should be asphalted. A laundry for disinfecting clothing and bedding, &c. of patients with infectious diseases is absolutely required.

**At Bellary.**—The infantry barracks consist of 11 blocks built on a red sandy soil. They are well ventilated and afford ample accommodation. The barracks for the artillery are distant about half a mile from the infantry. The station hospital is a handsome, commodious two-storied building with segregate latrine accommodation at each end and connected with the main building by well-ventilated passages. A ward has been set apart for the use of officers, and it has been partitioned off from the main part of the building. A wall 5 feet high has been lately built round the hospital. This wall should be reduced on the east side by at least 3 feet, as it obstructs the view, and is a subject of annoyance to the patients. The hospital apprentices' quarter is used for the treatment of contagious cases, there being no contagious hospital proper. A hospital for contagious diseases for males and females is greatly needed.

**Ramandroog Barracks.**—The accommodation for the troops consist of two main blocks, one for single and the other for married men. The barracks are substantial buildings kept in a good state of repair, and are situated on the south-west side of the plateau.

**Southern District.**—The general health in this district has been good. The sanitation of barracks, hospitals and out-buildings has been well looked after. At Wellington the barracks are comprised of six detached blocks of two-storied masonry buildings in the form of a parallelogram. There are six huts situated on the Racecourse Hill, one-storied buildings arranged in a double row. The accommodation is not sufficient, some men are always obliged to be in tents during the season the convalescents and young soldiers are at the dépôt. This is somewhat objectionable during the wet season. The existing system of drainage consists of (1) masonry drain underground; (2) masonry surface drains; (3) surface drains, not masonry. Rain water falling in the barrack square passes through the masonry surface drains into the underground drains. Water from the roofs and the washings from the cook-houses at the ends of the barracks passes directly into the underground drains. These drains discharge themselves into masonry surface channels of various lengths, but not being long enough the water flows down the hill sides and forms cesspools. Nothing up to the present has been done to replace the three

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condemned cells. Neither the latrines nor urinals can be considered satisfactory, and have been condemned. The ground upon which they stand is saturated with urine, and there is always a strong odour from them. The hospital is situated on a spur of the same hill as that occupied by the barracks, and about 200 yards distant from them, arranged in two parallel one-storied buildings. The accommodation is far from sufficient for the strength of the troops present from March to October, consequently tents have to be pitched in the hospital compound in which venereal cases are treated. Nothing has been done to enlarge the hospital. At Cannanore the detachment is accommodated in the new barracks, which are sufficiently large and well ventilated. Large open drains run along the sides of the barracks, which are used exclusively as surface drains. After leaving barracks these drains are covered; the drainage is eventually discharged into the sea. The water for drinking purposes is obtained from wells. It has been of good quality and the supply sufficient. At Calicut the men are housed in stone buildings with tiled roofs. During the year a new block to accommodate 30 men was erected. This block faces the sea, is excellently ventilated and drained, has a cemented floor, and is in every way satisfactory. The wooden floorings in some of the old barracks-rooms were in a very unsatisfactory state, and cement has been substituted in one of the rooms. The hospital is built of stone and brick, and roofed with tiles. The wards are airy and well lighted. Improvements made during the year: (1) New barrack block for the men; (2) new swimming bath; (3) new quarters for the men of Army Hospital Corps.

At Malapuram the barracks consist of three large and lofty rooms. They are built of laterite bricks, tiled roofs, with a wooden lining. The ventilation is perfect, and the rooms are shaded from the sun by large verandahs. The hospital consists of two large lofty rooms used as wards, and a dining room which is also used as a ward. It is a very good building, and in every way suitable for the purpose required. There are no quarters for the men of the Army Hospital Corps.

*Secunderabad District.*—The health of the troops in this district has been fair. The sanitation of barracks hospitals and out-buildings has been attended to. At Secunderabad the 1st British Infantry Barracks consists of ten large single-storied masonry buildings, built on a plinth 2½ feet high, with outer verandahs. The main building consists of a large central room. On either side is an inner verandah which is utilised for sleeping purposes. The bungalows were unavoidably somewhat overcrowded. The 2nd British Infantry Barracks consists of 18 single-storied stone buildings raised on a plinth about 2½ feet high, and arranged in *échelon*. Each block has two dormitories for 20 men, each with a centre dining room now used as a dormitory for 8 men. The cavalry barracks are of grey granite, solidly built with a raised plinth. The main line consists of 8 blocks, four single-storied and four double. The second line of barracks consists of three single-storied blocks constructed in the same way as the single-storied blocks in the main line, and situated a little to the east. About 1½ miles south of the Cavalry barracks the Artillery barracks occupy an extended position on an elevated ridge, and fully exposed to the breezes from various directions. About half a mile from any buildings, and in an isolated position is situated a deep well about 40 feet in diameter, staired throughout and coated with cement internally, mouth surrounded by a wall 4 feet high, and above roofed by zinc sheeting. Water is drawn by means of a steam-engine, and is stored in reservoirs, and from thence conveyed through iron pipes to the houses and barracks. The water has been analysed and pronounced pure and wholesome. There is generally a plentiful supply. A special building should be erected for a central gymnasium. Within the cantonment there are some patches of wet cultivation (paddy), and various dry cultivations are carried on in the neighbourhood of the station. Topes of toddy trees are to be found in most places. During the hot season, from March to the middle of June, the whole place is burned up and dry, vegetation becomes very scarce, and the troops experience considerable difficulty in procuring any variety of vegetables, but during, and some time after, the monsoon vegetation is plentiful. Many kinds of English vegetables are then cultivated in the Commissariat gardens, when the troops are fairly well supplied with them. There are 3 hospitals for the sick of the Infantry, Cavalry

and Artillery, viz., South, North, and Central. The South is a large two-storied building. It is totally inadequate for requirements. The wards for the treatment of special medical cases are quite unsuitable for the purpose, in consequence of the absence of seclusion and isolation. The noise from the other wards can be distinctly heard in them. There are not sufficient suitable special wards. No special wards for the safe custody of insanes. No offices for medical officers. The medical stores are small and very unsuitable. The arrangement of the whole place is very irregular and unsatisfactory. The North Station Hospital is a single-storied building situated on a ridge quite close, and to the south-west of the barracks. The accommodation is ample. The purveyors' quarters at the Central Station Hospital is built too near the hospital.

*Madras District.*—The health of the troops in this district has been good.

The sanitation of barracks, &c. has been satisfactory.

At Madras.—The troops are stationed in Fort St. George. The Fort is surrounded by a moat, the height of the water in which varies with rainfall and surface drainage. The Coum river runs through the town of Madras, taking a serpentine course, and reaching the sea about half-a-mile below the Fort. This river receives a large portion of the sewage of Madras, and is much polluted. The question of its purification has been before the municipality for several years, but as yet no steps have been taken to carry out the proposals. The barracks occupied by the Infantry in Fort St. George consist of the King's Barracks A B C and D blocks. This building is of two stories situated in the north-west of the fort enclosure about 200 yards from the sea. There are spacious verandahs on all sides. The upper story is occupied by troops. Both stories are well lighted and ventilated, but the quadrangle is not well ventilated. The barracks occupied by the Artillery consist of a long double-storied building, situated south-west of the King's barracks, well lighted and ventilated, open on all sides. The drains for the conveyance of surface water are for the most part effective, but one which runs round the King's barracks, especially at the north-east corner of the building, lies low, and is subject to a back current from the moat after heavy rainfall.

Drinking water is laid on from the Seven Wells source to cisterns in the fort and to the kitchens. The supply is constant, and practically unlimited, but it is deteriorating. Analysis shows a large amount of chlorides, and a decided trace of organic matter. The pipes are old, and will soon have to be replaced. The building appropriated as a station hospital is a wing of the general hospital, it is half-a-mile from the fort, and opposite the Central Railway Station. It is situated close to the main road, where there is constant traffic and a large amount of the red dust, peculiar to this locality, permeates the hospital, and renders the cleaning of the wards and staircases a matter of some difficulty. The river Coum runs by the south-east of the hospital, and the emanations from its banks are occasionally unpleasant. There is ample accommodation. The latrines are airy and well ventilated, but badly constructed. The cook-house is inconveniently situated in the compound, and too far from the wards. It is small; within the last year it has been re-roofed, the walls raised about three feet, and ridge ventilation given. The defects of the hospital which should receive early attention are:—1. Accommodation for insanes. 2. Accommodation for eye cases. 3. Accommodation for infectious diseases. 4. Quarters for medical warrant officers. 5. Quarters for Army Hospital Corps. 6. Quarters for storekeeper. 7. Laundry. 8. A more conveniently situated and larger cook-house. At St. Thomas' Mount.—The two new barracks for the two batteries are situated a short distance to the south-west of the Mount. The more westerly are doubled-storied built on the standard plan. Extending eastward from these are three single-storied blocks, the centre of which is bomb-roofed, and has no ridge ventilation, this being effected by opposite doors and windows. The station hospital is a large double storied building. The upper rooms are cool, bright, and cheerful, the lower have less light, but are well ventilated. Inside the hospital compound there is a detached building with two wards used for contagious diseases. The women's hospital is also a large double storied building facing south-west. The accommodation is ample.

Rogers' automatic dry-earth system is used at the hospital. The excreta is emptied into air-tight receptacles, and removed in Crowley's patent filth

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carts daily to a place a mile away from the barracks. At Poonamallee.—The new barracks have been opened during the year, and the old one vacated by the troops. The new building is a remarkably fine one, built of brick, and made to accommodate 204 men. It is double storied, and the rooms are high and airy.

The hospital is a very fine two-storied brick building, situated a quarter of a mile south-east of the barracks. It is capable of accommodating 100 patients. Ventilation is excellent, and accommodation ample. No contagious disease ward exists at present, but one is in process of being built. At Pallaveram.—The detachment of British troops when on musketry duty occupy barracks No. I., II., and XIV., formerly used as native place of arms, and two small hospital buildings, situated to the northern, and more open side of the cantonment. They are well ventilated, and are bomb roofed, which tend to keep them cool during the hot season.

*Rangoon District.*—The general health of the troops in this district has been fair. The sanitation of the barracks, hospitals, and outbuildings has been satisfactory. Rangoon is situated on the Irrawaddy, about 25 miles from its mouth. The cantonment is situated about a mile to the north of the town, and is well laid out with good sound roads, running more or less at right angles, and well provided with surface drains, which prevent any accumulation of water. The Infantry barracks are situated to the east of the cantonment, built on the highest part of Rangoon. From a sanitary point of view, the site could not be better chosen, as there is free drainage and free ventilation. The Infantry Barracks consist of two rows of teakwood buildings, built *en échelon*; 7 large blocks, each built to hold 96 men and 4 non-commissioned officers; and one smaller block to hold 50 men. The Royal Artillery Barracks are situated to the west of the Infantry Lines, and are built on a lower level. They consist of three blocks raised about three feet off the ground, and are connected by a covered way. They are capable of holding 158 men; thus there is not sufficient space for the two companies occupying them. The hospital is built on the same elevated site and in close proximity to the Infantry Barracks. It consists of four separate blocks, built *en échelon*, facing south-west. Brick and cement drains surround the hospital, and leading into larger ones in rear, pass into a masonry receptacle from which pipes run, and open out at the bottom of the hill. The want of an infectious hospital is much felt, for in the event of an infectious disease occurring, there is absolutely no place to isolate it, except in a tent, which considering the nature of the climate would for a great part of the year, be a dangerous proceeding. A private bungalow in close proximity to the Station Hospital, has been rented for the purpose of a female hospital, a new kitchen and latrine have been built during the year.

Meiktila Barracks are wooden buildings built on piles, and being new are efficient in every way. The ventilation is excellent. The water is obtained from a large artificial lake, around which are the officers' quarters and native residences. It is open to pollution from surface drainage. The station hospital is one of the best and most conveniently situated buildings in the station, close to the barracks, yet separated by the main road, it is easy of access for the men at all hours, consists of two large permanent wooden buildings, with excellent verandahs, latrines, and bath-rooms, all raised about 12 ft. from the ground. In the old building is an eye ward, a smaller ward, which can be used for non-commissioned officers, and a larger ward partitioned off into three smaller wards for privates, below are the surgery, office, medical stores, storekeeper's room and detention ward. The second new building which was opened during the year is structurally the same as the old building, with slight modifications as regards the bathing and latrine accommodation. *Thayetmyo.*—The sanitary condition of the bungalows in cantonment inhabited by officers has been improved considerably by the addition of servants' latrines. It was considered that the foliage in some places was too dense, preventing a free circulation of air, and steps are being taken to thin some of the smaller trees out. The barrack-bungalows are constructed of teak, raised on piles, with double shingle roofs and verandahs on either side. The bungalows in the Artillery Lines are constructed on a similar plan, but are not quite so large.

They are all well ventilated, and the accommodation is ample. Water for drinking and cooking purposes is derived in sufficient quantity from wells in cantonment. The water was analysed and found good. The river being very muddy, the water for ablution purposes is derived from tanks. The station hospital is situated at the north-west of the European Infantry Barracks. It is a two-storied building with a high basement. This as well as the lower storey is built of masonry, the rooms and verandahs, having cemented floors. The upper storey is built of teakwood with a double roof. The accommodation was not sufficient, and tents were used. Port Blair.—Ross Island, on which the detachment of European troops is stationed, lies across the mouth of the harbour of Port Blair. The island is well planted with ordinary tropical trees and bushes. The barracks, built of Andamanese limestone, lie north and south, about 100 ft. above sea level, and are well exposed to the breezes of both monsoons. The accommodation is ample. Drinking water is obtained from two wells, cut into the limestone and bricked. The hospital is situated on a slope to the north of the barracks at the extreme point of the island. It is a wooden structure raised on piles 6 ft. above the ground. It is well protected by the hill to the west during the wet and damp of the south-west monsoon. The ventilation is good, and accommodation ample.

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*Myingyan and Mandalay Districts.*—At Mandalay the cantonment is situated to the north-east of the town, and is two and a half miles from the Irrawaddy. It is fairly well wooded. Owing to the nature of the soil, drainage is a difficult matter. The masonry drains built in the cotton soil are continually out of working order, and worse than useless. During the rainy season the water becomes stagnant in many places, noticeably in the hospital compound, where the surface drains become choked and water does not run off. The drains have been widened and generally looked to during the year. The British infantry barracks are situated in the north-east quarter of the fort. The barracks are built of teak, raised about 12 feet from the ground with a broad verandah and ridge ventilation. The barracks of the mountain battery are also of teak raised 6 feet from the ground, and are well ventilated. They were built for natives. New barracks are in course of construction for European soldiers. The hospital consists of three buildings arranged in a row and connected by a covered way. They are at the north-east corner of the cantonment. The ground floor of No. 1 block has been paved and enclosed and used as a ward for venereal patients. The female ward is 150 yards to the north of the men's wards. It is built of teak and is a very nice and suitable building. An officer's ward has been built. It is suitable, and can accommodate four patients. At Shwebo the cantonments in which the British troops are now quartered are about 2 miles to the north-east of the town of Shwebo. The barracks consist of eight buildings, each capable of accommodating 50 men. Each building is constructed of teak wood, and consists of a ground floor of kunkur, above which is the barrack room supported on wooden uprights and surrounded by a verandah. The rooms constructed of masonry on the ground floor below the barrack rooms, intended for day and dining rooms have been misappropriated for temperance room, quarter-master's stores, shoemakers' and tailors' shops, &c. The ventilation is very good. Quarters on the unit system have been erected for officers. Medical officers' quarters have been completed, which are also on the double unit system and utterly unsuitable. Two new quarters in the British infantry lines were completed and handed over to the officer commanding 2nd Yorkshire Regiment. The quarters are now sufficient for the officers of the station. The water supply is limited and indifferent. There has been considerable correspondence during the year 1892-93 with regard to the water supply in consequence of the report of the analysis not being very satisfactory. That for drinking purposes is now obtained from two large wells near the vicinity of a tank, and is brought into cantonments by means of pipes. The wells in the British infantry lines are not now used except to obtain water for washing and other like purposes. The hospital accommodation has been ample since the new block was handed over to the medical authorities. Close to the hospital on its west side is situated the contagious diseases hospital, a stone building containing two wards capable of accommodating 4 patients. Bhamo is situated on the left bank of the Irrawaddy about 1,000 miles from its mouth,



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and at an elevation of 640 feet above the sea level. There are two forts, "A" and "C." Fort "A" is on the river bank about one mile above the town. It is garrisoned by native military police. Fort "C" is the main fort, and is situated about a quarter of a mile from the river bank, and in it all the troops are quartered. It is surrounded by an undulating plain covered with thick jungle. The European quarters in Fort "C" are the usual teakwood buildings raised on piles about 12 feet from the ground. The ventilation is good, and there has been no overcrowding. The hospital is a teakwood building situated in the south of Fort "C." The ventilation is good and accommodation ample. Permanent teakwood quarters were erected during the year inside the fort at a convenient distance from the hospital for the men of the Army Hospital Corps. Bernardmyo.—This is a small military station in the ruby mines district of the Shan State. The station is situated in a large valley on the table land formed by the Shan Hills. Bernardmyo was almost totally destroyed by fire in February 1893, and has consequently been in great part rebuilt. There are 7 barrack rooms; 4 of these remained after the fire, and are at the northern end of the station. They are wooden buildings raised several feet off the ground on piles, thatched with country grass. New and large windows have recently been introduced into these buildings. The open spaces between the top of the walls and the roof have been partially filled up with planking, but the space remaining for ventilation is ample. A new mounted infantry barrack has been built on a good site to the north-east of the camp. The old hospital having been burnt in the fire of February 1893, a new one has been erected. It is well placed on a gentle slope running north and south. It is built of wood raised several feet off the ground on piles. The roofing is galvanised iron with wooden ceiling beneath. The medical officer in charge remarks as follows:—"The station itself has been vastly improved " by the building of new bungalows, the removal of old sheds and buildings, " the removal of dead tree stumps, levelling of ground, cutting of jungle and " cultivation of ground, and attention to surface drainage. It cannot be too " strongly insisted upon, as has been previously brought to notice, that the " system of relieving troops before the rains have ceased or immediately after- " wards is extremely detrimental to their health and efficiency, not to say " dangerous to life. The intensity of the malarial poison to which the men " are exposed on the march is demonstrated by the sick returns. Troops " should not be moved except between 15 December and the end of March. In " my opinion this station is unsuited for convalescents during the rainy " months on account of the difficulty and danger of the journey up from " Thabeitkyin, together with the humidity of the atmosphere and wet condi- " tion of the ground, which predisposes to rheumatism, but in the cold " months, when the plains are at their best, this station is cold, bracing, and " healthful."

## III.—BOMBAY.

The average strength of warrant officers, non-commissioned officers, and *Bombay*. men during the year was 13,515. The most important of the statistics of sickness and mortality are shown in the following table :—

1893. Average Strength.	Admissions.	Deaths			Invalids		Average constantly Sick.	Ratios per 1,000 of Strength.				
		In the Command.	Of Invalids.	Total.	Sent Home.	Finally dis- charged.		Admissions.	Deaths.	Invalids sent Home.	Invalids finally discharged.	Constantly Sick.
13,515	19,392	137	8	145	288	149	1018·26	1434·8	10·73	22·04	11·02	75·34

Compared with corresponding results in the previous year a decrease of 159·6 is seen in the ratio of admission, and one of 3·36 in the death ratio, but there is an increase of ·42 in the constantly sick rate. As compared with the average rates for the previous ten years there is an increase of 27·9 in the admission rate and of 4·78 in the constantly sick rate, but the death rate shows a decrease of 4·29. The average sick time to each soldier was 27·50 days, a very slight increase over the previous year, but longer by 1·75 days than the rate for the previous decennium. The average duration of each case of sickness was 19·17 days, an increase of 1·97 days on the previous year and of ·87 of a day in the ten years' rate.

The loss to the Command by death and invaliding was 435 men, and the loss to the service from deaths and invalids finally discharged was 294, or a rate of 21·75 per 1,000 of strength, being lower by 8·20 than in the previous year.

In Abstract XXX. will be found a table showing the prevalence of sickness and mortality in the different administrative districts of the Command. Compared with the ratios per 1,000 of admissions in the last year, there is a decrease in the admission rate in all the districts, the highest being in that of Aden, 885·4. In the Nagpore, Deesa, Sind, Bombay, Mhow, and Poona, the decrease was 513·8, 356·7, 200·0, 72·9, 64·2, and 21·6 respectively. The mortality rate was also lower in all the districts, except Aden and Bombay, which show an increase of 4·34 and 1·77 respectively.

In Abstract XXXI. is a table showing the admissions, deaths, and ratios per 1,000 at the principal stations in the Command. Ahmedabad, Neemuch, and Deolali furnished the highest ratio of admissions, being 2297·4, 2294·0, 2074·1 per 1,000 respectively. The lowest admission rate was furnished by Ahmednagar, being 767·7 per 1,000. Ahmedabad furnished the highest mortality rate, being 43·10 per 1,000, and Hyderabad the lowest, being 2·54 per 1,000.

In Abstract XLIII. is a table showing the sickness, mortality, and invaliding in the different arms of the service and in the several corps which served in the Command during the year. Comparing the admission and death rates per 1,000 in the calvary with the previous year's figures an increase of 162·7 and 2·36 is observed in both.

In the Artillery the admission rate per 1,000 is lower than the preceding year's rate by 186·6, but the death rate shows an increase of 1·16 per 1,000.

The admission rate in the Royal Engineers shows an increase of 884·2 per 1,000 over the preceding year's figures. There were no deaths.

In the Infantry both the admission and death rates show a decrease of 155·2 and 3·91 per 1,000 as compared with the previous year's figures.

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In the following table the influence of age on sickness, mortality, and invaliding among the troops in the Command is shown as far as possible :—

Ages.	Average Strength.	Admissions.	Deaths.	Invaliding.	Ratios per 1,000 of Strength.		
					Admissions.	Deaths.	Invaliding.
Under 20 years - -	426	309	2	8	725·4	4·69	18·78
From 20 to 25 years -	5,962	11,335	73	144	1901·2	12·24	24·15
" 25 „ 30 „ -	4,871	6,610	51	109	1357·0	10·47	22·38
" 30 „ 35 „ -	1,067	793	7	23	743·2	6·56	21·56
" 35 „ 40 „ -	366	283	3	8	795·2	5·43	22·47
" 40 years and upwards	77	60	1	6	779·2	12·99	77·92
Not stated - -	756	2	—	—	2·6	—	—
Total - -	13,515	19,392	137	298	1434·8	10·14	22·04

As in the preceding year the highest ratio of admissions and deaths per 1,000 were among men between 20 and 25 years of age. In men above that age the ratio went on decreasing.

In the next table will be found calculations to show, as far as possible, the influence of length of service in the country on the sickness and mortality among the troops during the year.

Years of Service.	Average Strength.	Admissions.	Deaths.	Invaliding.	Ratios per 1,000 of Strength.		
					Admissions.	Deaths.	Invaliding.
Under 1 year - -	1,919	3,899	33	39	2301·8	17·20	20·32
From 1 to 2 years -	2,089	3,831	18	69	1833·9	8·62	33·03
" 2 „ 3 „ -	1,838	2,774	21	38	1509·2	11·43	20·67
" 3 „ 4 „ -	1,581	2,247	13	34	1421·3	8·22	21·51
" 4 „ 5 „ -	1,618	2,204	13	42	1362·2	8·03	25·96
" 5 „ 10 „ -	3,270	4,171	37	68	1275·5	11·31	20·80
" 10 upwards -	463	264	2	8	570·2	4·32	17·23
Not stated - -	737	2	—	—	2·7	—	—
Total - -	13,515	19,392	187	298	1434·8	10·14	22·04

As in the previous year, the highest admission and death ratios per 1,000 were among men in their 1st year of service; among men above that period they showed a decrease.

In Abstract XXIX. will be found the admissions, deaths, invaliding, &c., in the different groups and orders of diseases, and in Abstract XXX. the relative prevalence of sickness and mortality in each of the administrative districts.

**GENERAL DISEASES.—Diseases dependent on Morbid Poisons.—Small-pox** caused 20 admissions and 2 deaths, which are equal to ratios of 1·5 and ·15 per 1,000 respectively. Compared with the previous year's rates, the former shows an increase of 1·0 and the latter a decrease of ·01. The largest number of cases occurred in the Poona District. **Other Eruptive Fevers.**—Under this head 81 admissions were returned, being at the rate of 6·0 per 1,000. This rate is in excess of that in the previous year by 5·7; the increase is due to

dengue fever. Dengue was epidemic at Aden during the latter part of the year, and 71 cases occurred among the troops. None proved fatal, but many of those attacked were inefficient for a considerable time from the debility and pains following the fever. A solitary case of scarlet fever, which terminated favourably, occurred at Hyderabad. There seems no doubt of the correctness of the diagnosis, though there was no evidence of the man having been exposed to the contagion of scarlet fever. The other cases were 7 of measles and 2 chicken-pox.

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*Enteric Fever* caused 173 admissions and 50 deaths, against 222 admissions and 64 deaths in 1892. The admission rate per 1,000, 12·8, is much less than in the previous year, when it was 17·4. The death rate is also less, 3·70, compared with 5·04. Compared with the seven years' average rates there is also a decrease, viz., of 1·4 and '60. The per-centage of mortality to attack was 28·90, against 28·83 in 1892 and 30·28 the seven years' average. Abstract XXXII. shows the stations at which the admissions and deaths from enteric fever took place in each quarter of the year. There has been a decrease at all stations except Deesa, Purandhur, Neemuch, Ahmedabad, Abu, and Aden. The decrease at Poona, Kirkee, Mhow, and Karachi was most satisfactory, but the increase was marked at Neemuch, Deesa, and Ahmedabad. Aden, free from the disease for very many years, may now be looked on as a place where cases may be expected.

The disease, as a rule, attacked young soldiers, and those recently arrived in the country suffered most. Generally speaking, it was most prevalent in the rains, but at certain stations, viz., Kirkee, Ahmednagar, and especially at Nasirabad and Deesa, the majority of the cases occurred before the rains set in.

The origin could not be traced to any sanitary defects in the barracks or their vicinity, or to the water supply. In one station, Ahmedabad, the medical officer in charge believed that the milk supply of the Royal Artillery was the cause, but it is doubtful whether this can be proved. There are, no doubt, grave sanitary defects in every bazaar and village, and the drinks, &c., sold to soldiers in those places are most deleterious. The great increase of private latrines in bazaars and native houses with no drainage and the ground in their vicinity constantly soaked with sewage, being enclosed with walls, and never exposed to the sun, is a source of great danger. A soldier frequently contracts venereal and enteric fever at the same time, the venereal appearing first, and the presumption is that he contracts them in the same place. In this report it is shown that one man contracted the disease prior to arrival in India from H.M.'s troopship "Malabar," and last year also 2 cases were contracted on a troopship, which were admitted into the Poona Station Hospital. It is thought that the disease is in this way every year imported into India. The latrines in all barracks and hospitals are most carefully looked after during the day time, but in many cases the pans are not removed directly they are soiled, and this is not done at all after dark. The Principal Medical Officer is of opinion that enteric fever is frequently contracted by men using a latrine where the pan has already been soiled by a man suffering from the disease who has not yet applied for medical treatment. The latrines used by the men frequenting the canteens and recreation rooms, which being much used in the evening, would be most likely to spread the disease, may account for the disease attacking men in different barracks.

Remarks on the prevalence of enteric fever at each station are given below.

*Poona.*—To the 24 admissions and 10 deaths recorded must be added six admissions with three deaths of men who undoubtedly contracted the disease in Poona prior to their departure for Bombay on duty during the riots there in August. Another case of a man in which the disease developed itself at Deolali immediately after his arrival from Poona should also be added, thus bringing the number of cases originating in the station up to 31, with 13 deaths. This, however, is a great improvement on the previous year, when the admissions were 61, and the deaths 18, the ratios per 1,000 of the year under report being 11·9 and 4·94 respectively, against 31·0 and 9·14 in 1892. The type of the disease was severe, and the mortality proportionally large. 8 of the cases were admitted before the beginning of May, 1 case occurred in December, and all the others between the 9th of July and 3rd of October. 8 of the cases treated locally came from Ghorpuri, 13 from Wanowrie, and 3

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from the military prison. In July, of 6 admissions for the disease, 3 were from the military prison, out of a strength of 83 prisoners. The origin of these cases was most carefully investigated, and attributed by the medical officer in charge to a surface drain, which was polluted by the drainage from washing clothes and washing chamber pots, the first case having occurred in a man who was employed in repairing the drain. It was recommended that the drain should be paved, and that more supervision should be exercised over the men washing chamber pots and over the sanitary condition of the drain. No cases occurred in the prison after July.

*Kirkee.*—There was a great reduction in the mortality from enteric fever, and a smaller one in the admissions compared with the previous year; there being 18 admissions, with 2 deaths, against 24, with 9 deaths in 1892. The medical officer in charge attributes the low rate of mortality to his having treated the majority of the cases with pure carbolic internally in frequent doses combined with chloroform.\* The cases as regards time of attack were fairly spread over the year, the greatest number any one month being 4 in April. As regards locality, 5 cases came from one barrack, 4 from another, and 3 from a third. Though careful investigations were made, no cause could be assigned.

*Ahmednagar* shows a most satisfactory reduction in admissions and mortality, there being 13 admissions, with 1 death, against 17 admissions, and 5 deaths in 1892. 8 of the cases occurred before the rains set in, the others between 25th June and 26th July.

*Satara.*—Only one case occurred, which recovered, its origin could not be traced. This is the first case which has occurred since 1888, and only the second recorded. *Purandhur.*—There were 3 cases and 2 deaths, against one, which was fatal in 1892; one of the cases was imported from Neemuch, but the origin of the others could not be traced. The only sanitary defect discovered was a tank, near the barracks from which the cases came, used for ablutionary purposes. This was somewhat offensive, and was cleaned out.

*Mhow.*—There was a most satisfactory decrease in the number of admissions, 10 against 22 in 1892. The proportion of deaths was, however, much higher, being 4, compared with 3 in the previous year. The two first cases were in May and June, the rest between 30th July and 2nd September, during which period a woman also was attacked.

*Nasirabad.*—There were 15 cases and 3 deaths, compared with 14 cases and 7 deaths in 1892. It is probable that one of the fatal cases contracted the disease at Neemuch. All the cases, except one in September, occurred before the rain set in, and were fairly distributed over the several months. The medical officer finding that there was great carelessness on the part of the "pop" makers as to their water supply had instructions issued that only water from the Danta pipes should be used, and he thinks it possible that the practical exemption from the disease during the latter six months may be due to this precaution.

*Neemuch.*—There was a considerable increase, 11 cases, with 5 deaths, against 4 cases and 1 death in 1892. A case which terminated fatally, treated at Nasirabad, probably originated in Neemuch. The majority of the cases, including all the fatal ones, occurred during the rains.

*Colaba.*—There were 10 admissions and 5 deaths, but only three of the cases could be considered to have been contracted locally. Of these, 1 case occurred in January and 2 in July. There was no connexion between the two cases; one man was stationed in a fort in the harbour, the other in barracks. The only common condition was that both were in the habit of drinking a great deal of aerated water in the bazaar; one was a teetotaler, in his case the disease proved fatal seven days after admission, the cause of his death was really pneumonia, for on post-mortem examination, Peyer's patches were found to have begun to granulate and cicatrize, showing that the case had been an "ambulatory" one, and that the disease had existed 3 or 4 weeks. Of the imported cases, one was a man who developed the

\* Formula:—

R.—Acid: Carbolic (Calvert's) Pur.: min. xxxvi.  
Spt. Chloroformi: drachms ii.  
Tinct. Cardamomi: Co.: drachms iii.  
Syrupi Hemidesmi: ounces ii.  
Aque Chloroformi: ad. ounces xii.  
M.

disease immediately after arrival from Meerut, where it was prevalent. The others were men of the Lancashire Fusiliers recently arrived from Poona for duty during the riots in August. The type was most severe, and three of the six admitted died. *Bombay.*

*Deolali.*—There were 7 admissions and 4 deaths, compared with 8 admissions without a death in 1892. In one of the cases the disease was contracted at Poona, where the man had been at the Camp of Instruction, five of the others were in men of the garrison, and the seventh in a draft which arrived at Deolali, ex troopship "Malabar" on the 30th August, and was admitted three days after. The local cases occurred in February, July, August, and October.

*Deesa.*—There were 21 admissions and 3 deaths against 6 admissions and 2 deaths in 1892. The Leinster Regiment arrived from Agra, where the disease was prevalent, and, it is believed, brought it with them. There were 10 admissions in the first quarter, 9 in the second, and no cases during the rains. The increase in the strength of the garrison accounts for the increase in the number of admissions. The direct origin of the cases could not be traced.

*Ahmedabad.*—There were 13 admissions and 6 deaths against 7 admissions and 3 deaths in 1892; 6 of the cases occurred in the first half of the year, and the remainder, all men of the 35th Field Battery, R.A., between the beginning of August and the 10th of September. The medical officer was of opinion that the source of the infection was an inferior supply of milk used by the men of the R.A. in barracks, for after this was detected and put a stop to no more cases occurred. It must be noted, however, that the water supply was afterwards found to be not as good as it should have been.

*Abu.*—There were 4 admissions without a death against 2 with 1 death in 1892. One case was probably imported. The cases came from different barracks and the origin could not be traced. *Aden.*—There were 6 admissions and 2 deaths against 3 admissions and no deaths in the previous year. Two of the 6 admissions contracted the disease before arrival, but the others were contracted locally. Two of the cases occurred in the first quarter of the year, 3 in the fourth. *Karachi.*—7 cases occurred with 1 death against 25 cases with 4 deaths in 1892. The cases were distributed over the year, and were from no special body of men or barrack room. The general health of the station was very bad in the autumn, malarious fevers being very prevalent and the small number of enteric fever cases which occurred confirms the opinion of the Principal Medical Officer that enteric fever is a disease spread by itself and not of climatic or malarious origin. *Kamptee.*—There were 9 admissions and 1 death against admissions 11 and 3 deaths in 1892. 5 of the cases occurred in July; they were evenly spread over the whole barracks and not confined to any one building or body of men. In no case could the cause be traced.

*Other continued fevers* caused 444 admissions, being at the rate of 32·8 per 1,000, which is less than the rate in the previous year by 53·1, and than the average rate for the preceding 7 years by 45·5. The average number constantly sick, 1·72 per 1,000, is less than that in the previous year by 1·30, and than the septennial average rate by 1·35. The largest prevalence of this fever was in the Deesa District, the admission rate being 103·7 per 1,000, but this is much less than that of the previous year. The ratio in the Bombay District was 88·7, but this also shows a decrease compared with the previous year's rate. The ratios next in order were 23·4 in the Sind District, 20·5 in the Poona District, 15·6 in the Nagpur District, 5·1 in the Mhow District, and the lowest 1·1 in the Aden District. Compared with the corresponding previous year's rates there is a decrease in all except that of the Aden District, which is exactly the same as in the year 1892. From the above statistics it will be observed that continued fevers on the whole were less prevalent in the Command during the year under report.

*Cholera.*—Abstract XXXIII. shows the sickness and mortality due to cholera and the stations where it prevailed during the year. The disease was less prevalent than in the previous year. 6 admissions and 4 deaths occurred, being in the ratios of ·4 and ·29 per 1,000, these rates show a decrease of ·8 and ·65 compared with the rates of the last year, and of 1·4 and ·98 with the

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corresponding average rates for the past 7 years. Five stations were attacked, of these Ahmednagar furnished 2 cases, Poona 1, and Kirkee 1, and all of these were fatal. There was one admission at Indore and one at Colaba, but both men recovered. The admission at Colaba did not belong to the garrison. The man attacked was a warrant officer of the Commissariat Department, and lived in the town of Bombay. The majority of the cases occurred during the third quarter of the year, the admissions being 4 and the deaths 3, in the fourth quarter there was 1 admission and 1 death, in the second quarter 1 admission only.

*Dysentery* caused 269 admissions and 7 deaths. Compared with the previous year's rates the admissions show an increase of 1·1 and the deaths ·44 per 1,000. In comparison with the corresponding average rates, however, there is a decrease of 1·5 and ·11 in both the rates.

Abstract XXXIV. shows the sickness and mortality due to dysentery in each military district in the Command and also its seasonal prevalence. The highest admission rate in any district was 43·9 per 1,000 in that of Aden, this is followed by 29·1 in the Poona District, 21·6 in the Sind District, 15·8 and 15·6 in the Deesa and Bombay Districts, and 8·3 and 8·1 in the Nagpur and Mhow Districts respectively. Compared with the corresponding ratios in the previous year there is an increase in the Aden, Poona, and Deesa Districts. The ratios in the other districts show a decrease, Mhow 8·9, Sind 7·1, Nagpur 3·5, and Bombay 2·2. The highest mortality ratio was 3·29 per 1,000, in the Aden District, next to it ·83 in the Deesa District, and next ·60 and ·52 in the Sind and Poona Districts. In the Mhow, Bombay, and Nagpur Districts the mortality ratio was *nil*. Compared with the previous year the death-rate has increased in the Aden, Deesa, Sind, and Poona Districts. Taking the seasonal prevalence of dysentery into consideration the third quarter of the year furnished the highest ratio of admissions being 8·8 per 1,000, next to it 4·8 in the fourth quarter, 4·2 in the first quarter, and 2·2 in the second quarter. The sequence of ratios is the same as that in the last year except that the fourth precedes the first. The highest mortality ratio, ·22 per 1,000, was in the fourth quarter, in the first and third quarters the rate was alike, being ·15, and in the second quarter no deaths occurred. In the previous year the first quarter only furnished a death-rate of ·08 per 1,000 and the rest none.

*Other Diseases* of this sub-group caused 4 admissions, being at the ratio of ·3 per 1,000. The cases were all of mumps.

*Malarial Fevers* furnished 6,059 admissions and 7 deaths, three being those of invalids after leaving the Command. The admission ratio was 418·3 per 1,000, which is less than that in the preceding year by 86·4. Compared with the average rate of the past 7 years an increase of 89·3 is observed. The death-rate, ·52 per 1,000, is higher than that in the last year by ·21 and by ·13 than the average rate. The ratio per 1,000, due to constant inefficiency, 12·81, is less than that of the previous year by 1·24, but compared with the septennial average rate it shows an increase of 2·35. The principal cause of admission was ague 5,881 cases, and remittent fever and malarial cachexia furnished 66 and 112 cases respectively. The highest prevalence of malarial fevers was 659·0 per 1,000 in the Sind District; the next below were 620·8 in the Deesa District, 600·8 in the Mhow District, 596·0 in the Aden District, 328·1 in the Bombay District, 283·8 in the Poona District, and the lowest 174·8 per 1,000 in the Nagpur District. Compared with the rates in the previous year there is an increase of 134·3 and 5·3 in the Sind and Poona Districts, and in the other districts the rates show a decrease, the largest, 905·7, being in the Aden District, the next 339·2 in the Nagpur District, 92·8 in the Bombay District, 32·5 in the Mhow District, and 27·2 in the Deesa District.

*Septic Diseases* caused 14 admissions, equal to a ratio of 1·0 per 1,000, which is the same as that in the previous year. Compared with the rate for the preceding seven years an increase of ·1 is observed. No deaths occurred.

*Veneral Diseases.*—*Primary Syphilis* caused 1,909 admissions, equal to a ratio of 141·2 per 1,000, which exceeds that in the previous year by 29·9 and the average rate for 7 years by 9·2. The ratio of constantly sick due to this affection was 11·31 per 1,000, which is in excess of both the preceding year's

rate and the average by 3·09 and 1·07 respectively. Including the sickness due to simple venereal ulcer, admissions 1,039, and constantly sick 63·06, the total admission rate for primary venereal sores was 218·1, and the rate of constant inefficiency 15·97 per 1,000. Compared with the corresponding rates in the previous year, there is an increase of 66·3 in the admission rate, and of 5·23 in the constantly sick rate. In comparison with the average rates for the preceding 7 years, an increase of 49·2 is observed in the former and one of 3·45 in the latter.

*Secondary Syphilis* caused 821 admissions and 1 death, giving an admission ratio of 60·7 per 1,000. Compared with the rate in the previous year and the septennial average rate, an increase of 10·3 is observed in the former and of 16·4 in the latter. The constantly sick rate, 5·01 per 1,000, is above the preceding year's rate and the average by 1·20 and 1·23 respectively.

*Gonorrhœa* furnished 2,499 admissions, equal to a ratio of 185·0 per 1,000, which is higher than the ratio in the preceding year, and also the average for the past 7 years by 25·1 and 19·5 respectively. The constantly sick rate, 12·65 per 1,000, is also higher in both these comparisons by 1·88 in the former and 1·39 in the latter. Taking all the venereal affections together the total rate of admissions, 463·8 per 1,000, shows an increase of 101·7 in the previous year's figures and of 85·1 in the septennial average. The total rate of constant inefficiency, 33·63 per 1,000, is also higher than in the preceding year by 8·31 and than the average rate by 6·07. Excepting simple venereal ulcer the prevalence of venereal disease in the several military districts in the Command is shown in Abstract XXX. The highest ratio of admissions due to primary syphilis in any district was 322·6 per 1,000 in that of Nagpur; this is followed by 181·7 in the Poona district, 174·4 in the Sind District, 163·8 in the Bombay District. The lowest ratio, 22·0 per 1,000, was in the Aden District, the next to this 56·7 in the Mhow District, and 88·0 in the Deesa District. In the preceding year the highest admission ratio was in the Bombay District, and the lowest in the Mhow District. Secondary syphilis caused the highest ratio of admissions in the Bombay District, being 146·7 per 1,000, the next below 70·8 in the Nagpur district, 58·1 in the Deesa District, 53·0 in the Poona District, 39·4 in the Mhow District, 34·0 in the Aden District, and the lowest 31·3 in the Sind District. In 1892 the highest ratio of admissions was in the Nagpur District, but the lowest, as in the year under report, in the Sind District. *Gonorrhœa* prevailed to the largest extent in the Nagpur District, the ratio of admissions being 269·5 per 1,000. Mhow District with 239·0, and Bombay with 232·7, followed next. The order of ratios in the remaining districts was Deesa 197·5, Sind 142·5, Poona 130·5, and Aden 120·7 the lowest. In the previous year the highest ratio was in the Deesa District, and the lowest in Sind.

*Parasitic Diseases*.—These furnished 24 admissions, equal to a ratio of 1·8 per 1,000, which is less than the rate in the previous year by 2·8; out of the total cases 21 were due to *tænia solium*.

*Scurvy*.—The admissions for scurvy were 5, which gave a rate of ·4 per 1,000, which is exactly a half of that in the preceding year.

*Alcoholism* was the cause of 47 admissions and 2 deaths, equal to a ratio of 3·6 and ·15 per 1,000 respectively. Compared with the rates for the year 1892, there is an increase in both the rates of ·9 and ·07 respectively, but in comparison with the average for 7 years, the admission rate shows a decrease of 3·8 while the death rate is equal. Of the total cases treated 5 were due to delirium tremens, which was also the cause of the two deaths.

*Debility*.—The admissions for debility amounted to 423, being at the ratio of 31·3 per 1,000, which is less by 11·9 than the previous year's rate and than the average by 1·8. The highest ratio per 1,000, 73·5, was in the Aden District, and the lowest 10·9 in the Mhow District. The intermediate ratios per 1,000 were Bombay 43·3, Sind 38·5, Poona 30·7, Deesa 29·9, and Nagpur 23·9. Excepting the Poona and Bombay Districts, which show an increase of 4·6 and 1·3 in the previous year's rates, a decrease is observed in all the other districts. Of the above admissions 3 cases were due to malformation.

*Rheumatism* furnished 375 admissions and 2 deaths. The admission ratio is equal to 27·7 per 1,000, which is more than that in the previous year and the average rate for 7 years by 1·5 and 2·5 respectively. Out of the total cases



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9 admissions and 1 death were due to rheumatic fever. The largest prevalence of rheumatic affections was 59·3 per 1,000 in the Aden District, and the next to it 57·4 in the Bombay District. In the Mhow, Nagpur, Deesa, and Poona Districts, the admission rates per 1,000 were 25·5, 23·9, 19·9, and 16·1 respectively, and the lowest rate, 14·4, was in the Sind District. Compared with the corresponding rates in the previous year, an increase is observed in the Aden, Bombay, Mhow, and Poona Districts, and a decrease in the Nagpur and Sind Districts.

*Tubercular Diseases* caused 46 admissions and 7 deaths (including that of an invalid after leaving the Command), being in the ratio of 3·4 and ·52 per 1,000 respectively. Both the admission and death ratios show a decrease of 1·8 and ·66 on the previous year's rates, and of ·8 and ·38 on the average figures. The highest ratio of admissions in any district was 9·4 per 1,000 in the Bombay District; the other ratios were 8·8 in the Aden District, 4·2 in the Sind District, 4·1 in the Deesa District, 3·1 in the Nagpur District, ·8 in the Poona District, and ·7 in the Mhow District. Compared with similar rates in the year 1892, an increase is observed in the Aden District of 6·6, Deesa District 2·6, and Nagpur District 1·0. The decrease is 11·8 in the Sind, 3·0 in the Bombay, 1·8 in the Poona, and ·6 in the Mhow District.

The highest mortality rate was 1·20 per 1,000 in the Sind district, 1·04 in Bombay, as well as Nagpur district; ·83 in the Deesa district, and *nil* in the Poona, Mhow, and Aden districts.

In the previous year the highest death-rate was in the Sind district, the lowest in the Poona district, and *nil* in the Mhow, Deesa, Aden, and Nagpur districts.

All the admissions and deaths were due to tubercular disease of the lungs.

*Other Diseases, Group D.*—The other affections of Group D. caused 95 admissions, equal to a ratio of 7·1 per 1,000, which is less than that of the preceding year by 5·2. Of the total number of admissions, 28 cases were due to non-malignant new growths, 1 to malignant new growth, 10 to scrofula, 2 to purpura, 52 to anæmia, and 2 to diabetes mellitus; of the 2 deaths 1 was due to purpura, and 1 to diabetes mellitus.

*LOCAL DISEASES.*—*Diseases of the Nervous System* furnished 161 admissions and 5 deaths, being in the ratios of 11·9 and ·37 per 1,000. Compared with the previous year the admission rate shows an increase of 1·6, but in the average for 7 years a decline of 1·5 is observed.

In the case of deaths there is a decrease of ·02 on the previous year's rate, and an increase of ·04 over the average. The highest rate of admissions in any district was 29·9 per 1,000 in that of Deesa, this is followed by 22·9 in the Bombay district, 14·3 in the Aden district, 12·6 in the Sind district, 10·4 in the Nagpur district, 5·7 in the Mhow district, and 5·2 in the Poona district. In the previous year the highest rate was in the Bombay district, but the lowest in the Poona district, as in the year under report. Among the total admissions 25 cases were due to mental disease, equal to a ratio of 1·8 per 1,000, which is less than that in the preceding year, and also of the average, by ·1 and 1·5. The remaining admissions were, 47 for neuralgia and its varieties, 30 for epilepsy, 24 for vertigo, 15 for affections of the brain and spinal cord, 5 for local paralysis, 4 each for hemiplegia and megrim, 2 for spasm of muscle, and 1 each for apoplexy, paralysis, hysteria, aphasia, and tetanus. The deaths were, 3 due to inflammation of brain and its membranes, 1 to apoplexy, and 1 to epilepsy.

*Diseases of the Eye* caused 180 admissions, equal to a ratio of 13·3 per 1,000, which is more than that in the preceding year by 1·5, but less than the septennial average by 1·2. The greatest prevalence of ophthalmic diseases in any district was 21·9 per 1,000 in that of Nagpur, this is followed by 20·3 in the Bombay district, 15·6 and 15·4 in the Sind and Aden districts, and in the Deesa, Mhow, and Poona districts the ratios were 14·1, 16·2, and 8·6 per 1,000 respectively. In the previous year the highest ratio was in the Sind district, and the lowest in the Deesa district. In the Nagpur, Bombay, Deesa, and Aden districts the ratios show an increase of 14·4, 10·1, 8·0, and 7·7 over the preceding year's rates, but the Sind district rate has declined by 10·5, the Mhow district rate by 2·1, and the Poona district rate by 1·1. Of the admissions, 133 were for conjunctivitis and its varieties, 12 for affections of the cornea, 16 for iritis, 2 for affections of the optic nerve and retina, 1 for that of

the globe, 7 for disorders of the vision, and 2 and 7 respectively for affections *Bombay*. of the lachrymal apparatus and the eyelids.

*Other Organs of Special Senses.*—Diseases of the other organs of special senses caused 158 admissions, being in the ratio of 11·7 per 1,000, which shows a decrease of 4·1 and 3·3 respectively on the previous year's and the average rate. The highest ratio per 1,000 of admissions was 28·9 in the Sind district, 22·4 in the Deesa district, 15·6 in the Nagpur district, 10·9 in the Mhow district, 8·3 in the Bombay district, 4·4 in the Poona district, and 3·3 in the Aden district. Excepting the Sind district, which shows an increase of 6·2, a decrease is observed in all the districts.

Of the admissions, 154 were due to aural diseases, 123 being for the external, 27 for the middle, and 4 for the internal ear, and the remaining 4 for nasal affections.

*Diseases of the Circulatory System* furnished 128 admissions and 3 deaths. The ratio of admissions, 9·5 per 1,000, is less than that in the previous year by 1·3, and than the septennial average by 3·7. The highest ratio in any district was 24·7 per 1,000 in that of Sind, next to it, 14·9, in the Deesa district, 11·0 in the Aden district, 9·4 in the Bombay district, 6·2 in the Nagpur district, 6·1 in the Mhow district, and the lowest, 4·4, in the Poona district. In the previous year the highest ratio was also in the Sind district, but the lowest in the Aden district. Compared with the ratios in the preceding year, the Deesa, Aden, and Sind districts show an increase of 7·3, 6·6, and 3·3 respectively, and the remaining districts show a decrease. The principal causes of admission were, 76 for palpitation, 35 for diseases of the heart and its membranes, valvular disease of the heart 34, and pericarditis 1; 16 for diseases of the veins, varix 11, phlebitis 3, phlegmasia dolens 2, and 1 for embolism. Valvular disease and fatty degeneration of the heart caused 1 death each. The death of the invalid was due to valvular disease of the heart.

*Diseases of the Respiratory System.*—Admissions 270, and deaths 10 (including that of an invalid after leaving the Command), were due to the diseases of the respiratory system, the ratio of each being 20·0 and 7·4 respectively. The admission rate is less than that in the preceding year and than the septennial average by 7·0 and 8·3, and the death-rate is fractionally more (·19) than the former and (·07) the latter. The Bombay district furnished the highest rate of admissions, 38·1 per 1,000, next to it the Sind district, 29·5, Aden district 27·4, Mhow district 18·0, Poona district 13·0, Deesa district 12·4, and Nagpur district 5·2. In the preceding year the highest ratio was also in the Bombay district, but the lowest was in the Aden district. Compared with the previous year's rates the Aden district only shows an increase, as much as 19·7, but there is a decrease in all the others, being 13·3 in Sind, 11·8 in Poona, 10·9 in Nagpur, 9·8 in Bombay, 7·3 in Deesa, and 2·3 in Mhow. The highest mortality rate was in the Sind district, 1·80 per 1,000, next to it in Mhow 1·02, and 52 in Poona, as well as in Bombay. Of the admissions 211 were for bronchial affections; 42 for pulmonary affections; pneumonia 31, hæmoptysis and chronic pneumonic phthisis 4 each, and abscess and cirrhosis of lung and emphysema 1 each; 14 for diseases of the pleura, pleurisy 12, and empyema 2; and 3 for diseases of the larynx, laryngitis 2, and aphonia 1; pneumonia caused 6 deaths, and pleurisy, abscess, and cirrhosis of lung 1 each. The death of the invalid was due to pneumonic phthisis.

*Diseases of the Digestive System.*—Diseases of the digestive system caused 1,263 admissions and 17 deaths (2 being those of invalids after leaving the Command), being at the ratios of 93·4 and 1·26 per 1,000, which are less than the rates in the previous year by 35·0 and 2·4 and than the septennial average rate by 34·9 and 2·6 respectively. The highest ratio of admissions in any district was 116·2 in that of Deesa, the next to it 107·3 in the Mhow District, 102·8 and 102·1 in the Bombay and Aden Districts, 101·6 in the Sind District, 76·7 in the Poona District, and 53·1, the lowest, in the Nagpur District. In the preceding year the highest rate was in the Mhow District and the lowest in the Poona District. Compared with the corresponding ratios in the year 1892, a decrease is observed in all the districts, the largest, 85·6, being in the Nagpur District, next to it, 63·7, in the Mhow District, and in the Bombay, Poona, Sind, Aden, and Deesa Districts 27·4, 21·4, 20·0, 17·2, and 12·8 respec-

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tively. The highest mortality rate, 2·61 per 1,000, was in the Bombay District, this is followed by 1·80 in the Sind District, '83 in the Deesa District, '78 in the Poona District, '68 in the Mhow District, and *nil* in the Aden and Nagpur Districts. In the preceding year the highest mortality rate was also in the Bombay District, and there were no deaths also in the Aden District. Excepting the Sind District, which shows an increase of '46, decrease in the mortality rate is apparent in all the other districts. The distribution of the total number of admissions was 371 for intestinal affections, 237 being due to diarrhoea, 296 for diseases of the palate and the fauces, more than half being due to sore-throat, 261 for liver complaints, 103 being for hepatitis, and 18 for liver abscess, 172 for disorders of the stomach, all except 8 due to dyspepsia, 88 for diseases of the rectum, &c., the largest number being due to piles, 59 for diseases of the teeth, alveoli, and gums, 5 for diseases of the mouth, 4 for peritonitis, 2 each for inflammation of the salivary glands, the pharynx, and the hepatic duct, and 1 for abscess of antrum. The deaths were due to abscess of the liver 9, including two of invalids; hæmorrhage from intestines, including malæna and typhlitis, 2 each; and enteritis, peritonitis, colitis, and inflammation of the hepatic duct 1 each. Abstracts XXXIV. and XXXV. show the local and seasonal prevalence of diarrhoea and hepatitis, including liver abscess. The admission rate for diarrhoea was 21·2 per 1,000 and the death-rate *nil*, as compared with 36·6 and '16 in the preceding year. The greatest prevalence of diarrhoea in any district was 33·6 per 1,000 in that of Mhow, followed by 21·9, 19·9, and 19·2 in the Aden, Deesa, and Sind Districts, 18·7 in the Poona District, 17·7 in the Bombay District, and 5·2 in the Nagpur District. Compared with the corresponding ratios in the preceding year, a general decrease is observed. The largest seasonal prevalence of diarrhoea was in the 3rd quarter of the year, the ratio of admissions being 9·8 per 1,000, the next was 4·5 in the 1st quarter, followed by 3·8 in the 4th quarter, and 3·1 in the 2nd quarter. In the previous year the largest prevalence of diarrhoea was also in the 3rd quarter, but the sequence of frequency was changed in the others, their order being 4th quarter, then 2nd quarter, and lastly the 1st quarter. Hepatitis and abscess of liver furnished an admission rate of 9·3 and a death-rate of '52 per 1,000, as compared with 10·9 and '63 in the preceding year. The highest ratio of admissions in any district was 19·8 in that of Aden, this is followed by 14·6 and 14·1 in the Nagpur and Bombay Districts, 8·5 in the Mhow District, 7·5 and 7·0 in the Deesa and Poona Districts, and 3·6, the lowest of all, in the Sind District. In the preceding year the highest ratio was in the Bombay District and the lowest in the Deesa District. Compared with the previous year's return the ratios of Aden, Deesa, Poona, and Nagpur have increased, but those in the Mhow, Bombay, and Sind Districts have decreased. Mortality was highest in the Bombay District 1·04 per 1,000, next '83 in the Deesa District, then '60 in the Sind District, '52 in the Poona District, '34 in the Mhow District, and *nil* in the Aden and Nagpur Districts. Hepatic affections largely prevailed during the 4th quarter of the year, the ratio per 1,000 of admissions being 3·3, next to it 2·6 in the 1st quarter, then 1·8 and 1·7 in the 3rd and 2nd quarter respectively. The order of the ratios in the preceding year was 1st quarter, next to it the 3rd quarter, then 2nd quarter, and lastly the 4th quarter. Mortality was highest in the 1st quarter, the rate being '22 per 1,000, next to it '15 in the 4th quarter, and '07 in both the 2nd and 3rd quarters. In the previous year the greatest prevalence was in the 3rd quarter, next to it in the 1st quarter, then in the fourth quarter, and the lowest in the 2nd quarter.

*Diseases of the Lymphatic and Glandular System* furnished 291 admissions, equal to a ratio of 21·5 per 1,000, which is less than that in the preceding year and the average rate by 16·9 and 10·3 respectively. 42·7 per 1,000 in the Nagpur District was the highest ratio, this is followed by 25·9 in the Sind District, 21·3 in the Poona District, 20·9 and 20·7 in the Bombay and Mhow Districts, 14·9 in the Deesa District, and 6·6 the lowest in the Aden District. In the previous year also the highest and lowest ratios were in the Nagpur and Aden Districts. Compared with the last year's figures there is a decline in the rates of all the districts. Of the total admissions 260 were for diseases of the lymphatics, the majority being due to inflammation and next to suppuration of glands, 29 to diseases of the spleen, and 2 to diseases of the thyroid body.

*Diseases of the Urinary System.*—Urinary diseases caused 25 admissions and 1 death. The admission rate, 1·8 per 1,000, is less than the rate for the previous year and the average by '9 and '3. The chief causes of admission were acute nephritis and Bright's disease, the death was due to the latter.

*Diseases of the Generative System.*—1,185 admissions are returned, being in the ratio of 87·7 per 1,000. Compared with the rate in the preceding year an increase of 32·2 is observed and compared with the septennial average rate an increase of 29·4. The Mhow District furnished the highest rate, being 154·8 per 1,000; this is followed by 139·3 in the Bombay District, and 77·2, 66·8, 51·6, 32·3, and 19·2 in the Deesa, Poona, Aden, Nagpur, and Sind Districts respectively. Of the total cases, simple venereal ulcer alone caused 1,039 admissions, 87 were for orchitis, and the remaining 59 for other diseases.

*Diseases of the Organs of Locomotion.*—Diseases of the organs of locomotion furnished 107 admissions, equal to a ratio of 7·9 per 1,000, this is less than that in the preceding year by '2, but more than the average rate by 1·2. 76 of the admissions were due to synovitis, and 31 to other diseases.

*Diseases of the Connective Tissue.*—Diseases of the connective tissue caused 259 admissions, or a ratio of 19·2 per 1,000, which is less than the previous year's rate by 1·5, but more than the average by '6. 201 of the cases were due to abscess, 53 to inflammation, and 5 to oedema.

*Diseases of the Skin.*—748 admissions were due to diseases of the skin, the ratio per 1,000 being 55·3. Compared with the rate in the preceding year a decrease of 18·5 has occurred, and compared with the average rate, there was also a decline of 14·4. The highest ratio of prevalence of cutaneous affections in any district was 119·6 per 1,000 in that of Aden; the next, 93·8 in the Deesa District, followed by 58·0 in the Mhow District, 57·9 and 57·1 in the Bombay and Sind Districts, 42·7 in the Nagpur District, and 27·8 in the Poona District. In the previous year the highest ratio was in the Sind District, and the lowest also in the Poona District. Compared with the return of the last year a decrease is observed in all the districts except a very inappreciable increase in the Aden District.

The chief causes of admission were boils 242, ulcers 177, whitlow and onychia 92, eczema 82, ringworm 48, itch 20, and 87 for other skin diseases.

*Poisons.*—Poisons caused 15 admissions and 2 deaths as compared with 14 admissions and 1 death in the preceding year. The cases were, 2 due to alcohol, both fatal, 8 of fish poison, 2 of poisoning by stinging insects, 2 of poisoned wounds, and 1 of dog-bite.

*Injuries.*—The admission rate for injuries was 93·6 per 1,000, which is less than the previous year's rate, and the average by 10·6 and 14·1 respectively.

General injuries caused 34 admissions and 11 deaths; 25 of the admissions were the result of heat, 7 of burns and scalds, and 2 of multiple injury. The deaths were due to heat apoplexy in 4 cases, to drowning in 4, to sun-stroke in 2, and to effects of heat in 1. Local injuries caused 1,231 admissions and 12 deaths. The chief causes of admission were contusions 367, wounds 398, sprains 249, abrasions 98, fractures 59, strains 16, dislocations 15, gun-shot wounds 13, foreign body 5, chemical injury 3, concussion and compression of brain 3 and 2 respectively, burns and scalds 2, rupture 1. The deaths were 2 from contusions, 1 from concussion, 2 from compression of the brain, and 2 from wounds, self-inflicted. A band sergeant of the 1st Battalion, Dorsetshire Regiment, cut his throat on board a troopship while coming from Egypt to Bombay. He was transferred to the station hospital at Bombay in almost a dying state, and succumbed soon after admission. A coroner's inquest was held and the verdict given was, "The wound was inflicted by himself while of "unsound mind." The other case was that of a private of the 1st Battalion, Leinster Regiment, at Deesa. The man had been under treatment for ague, from which he was convalescent. He left the ward early one morning, and was found later on in the garden with his throat cut with a razor. He died from syncope, the effects of severe hæmorrhage. No motive could be assigned for the deed. The verdict was, "Committed suicide by cutting his throat "with a razor while in a state of temporary insanity."

Gunshot wound caused 1 death, accidental, being due to the explosion of a shell in the breech of a 12-pounder gun.

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Fracture caused one death, laceration of brain without fracture of the skull 1, and fracture of the base of the skull 2, of which 1 was suicidal. The last mentioned was that of a private of the 2nd Battalion, Royal Lancaster Regiment, at Ahmednagar, a time-expired man, who did not want to go home. He was drinking heavily and his behaviour in barracks was considered so strange that he was sent to hospital and kept under observation for lunacy; but he was quite quiet and orderly. He was taken to the rear by two orderlies, who stood outside talking; after a time, as he did not come out, they went in and found that he had escaped through a skylight. Upon searching, however, he was found lying dead on the ground outside, and close to the west wash-house of the hospital. It is presumed he must have climbed up by a tree on to the roof of the hospital and then on to the tank above the wash-house, and then thrown himself down to the ground, a distance of about 30 feet. Death must have been instantaneous. The verdict was, "Was killed by jumping off the roof of a wash-house in the hospital while in a state of temporary insanity."

*Surgical Operations.*—During the year under report 2,970 surgical operations were performed, of which 18 were aspiration of liver abscess, 5 fatal; 5 opening and draining abscess of the liver, 1 fatal; 3 paracentesis of the pleura, in one result doubtful; and 1 laparotomy, fatal.

*Invaliding.*—The total number of men invalided home during the year 1893 was 298, a ratio of 22·04 per 1,000, an increase of ·70 over the preceding year, but less than the decennial average rate by 6·34. The invaliding rates for the different arms of service and for each corps, are shown in Abstract XLIII. In the Cavalry the invaliding rate was 36·04 per 1,000, which is more than that in the previous year by 5·17. In the Artillery the invaliding rate was 27·97 per 1,000, which is 8·37 in excess of that in the preceding year. In the Royal Engineers the invaliding rate was 30·30 per 1,000, and is ·89 more than that in the preceding year. In the Infantry the invaliding rate was 18·16 per 1,000; this is fractionally less by ·33 than that in 1892.

With regard to age the highest ratio per 1,000 in any age was 77·92 among men aged 40 years and upwards, next to it 24·15 among men between 20 and 25 years of age. In the succeeding quinquennia it declined. As to invaliding according to service in India, the highest ratio 33·03 per 1,000 was among men in their second year of service; it decreased in the succeeding years.

The causes of invaliding were enteric fever 6 cases, or ·44 per 1,000, an increase of ·28 over the preceding year's rate; dysentery 3 cases, or ·22 per 1,000, less by ·25; malarial fevers 40 cases, or 2·96 per 1,000, an increase of 1·47; secondary syphilis 29 cases, or 2·14 per 1,000, an increase of ·65; gonorrhoea 2 cases, or ·15 per 1,000, a decrease of ·01; debility 56 cases, or 4·14 per 1,000, a decline of ·11; rheumatism 10 cases, or ·74 per 1,000, an increase of ·27; tubercular disease 10 cases, or ·74 per 1,000, a decrease of ·52; other diseases, Group D., 6 cases, or ·44 per 1,000, a decline of ·19; diseases of the nervous system 30 cases, or 2·22 per 1,000, an increase of ·34 (of these 15 cases, or 1·11 per 1,000, were for mental affections); diseases of the eye 7 cases, or ·52 per 1,000, a decrease of ·19; diseases of other organs of special senses 6 cases, or ·44 per 1,000, a decrease of ·38; diseases of the circulatory system 32 cases, or 2·37 per 1,000, an increase of ·54 per 1,000; diseases of the respiratory system 2 cases, or ·15 per 1,000, a decrease of ·48; diseases of the digestive system 26 cases, or 1·92 per 1,000, an increase of ·03; diseases of the lymphatic and glandular system 2 cases, or ·15 per 1,000, a decrease of ·01; diseases of the urinary system 9 cases, or ·66 per 1,000, an increase of ·03; diseases of the organs of locomotion 7 cases, or ·52 per 1,000, an increase of ·21; diseases of the connective tissue 2 cases, or ·15 per 1,000, increase the same as the ratio; diseases of the skin 2 cases, or ·15 per 1,000, a decrease of ·09, and injuries 11 cases, or ·81 per 1,000, a decrease of ·85.

The number of men finally discharged as unfit for further service was 149, or a ratio of 11·02 per 1,000, which as compared with last year and the previous decennium shows a decrease of ·71 and 2·01 respectively. The principal disabilities necessitating final discharge were diseases of circulatory system 36 cases, or a rate of 2·66; diseases of nervous system 31 cases, or a rate of 2·29; debility 10 cases, or a rate of ·74; injuries 10 cases, or a rate of ·73; and tuber-

cular diseases 8 cases, or a rate of .59. The ratios do not present any marked *Bombay* degree of difference as compared with those of the previous year.

**Officers.**—The average strength of officers during the year 1893 was 509 and there were 360 cases of sickness, 8 deaths, and 27 officers were invalided. The ratio of prevalence of sickness was 707·3 per 1,000, which is less than the corresponding rate in the previous year by 174·8. The mortality rate was 15·72 per 1,000, and the invaliding rate 53·04 per 1,000, which are less than in the preceding year by 1·12 and 10·12 respectively; among the cases treated were 2 of small-pox, 23 of dengue, 1 of mumps, 19 of simple continued fever, 7 of enteric fever, 9 of dysentery, 103 of malarial fever, including 12 of remittent fever, and 1 of malarial cachexia, 5 each of gonorrhœa and debility, 10 of rheumatism, 1 of gout, 5 of diseases of the nervous system, including 1 of mania, 6 of ophthalmic diseases, 1 each of aural diseases and of diseases of the circulatory system, 13 of respiratory affections, 59 of disorders of the digestive system, 3 of diseases of the lymphatic system, 4 of diseases of the generative system, 5 each of diseases of the organs of locomotion and of the connective tissue, 21 of cutaneous affections, and 52 of injuries. The deaths were 2 from enteric fever, and 1 each from remittent fever and liver abscess. Asphyxia from submersion caused 3 deaths; these were three officers of the 7th Hussars, who in Poona in the month of June, went boating on the river while it was in flood and got carried over the dam. The remaining death was due to fracture of the cervical vertebra.

**Women.**—The average strength of women was 626, there were 546 admissions and 10 deaths, being in the ratios of 872·2 and 15·97 per 1,000, which are above the corresponding ratios in the preceding year by 22·6 and 5·71. Among the admissions were 1 case of small-pox, 4 of measles, 6 of dengue, 1 of influenza, 17 of simple continued fever, 3 of enteric fever, 13 of dysentery, 158 of malarial fevers, including 4 of remittent fever, and 9 of malarial cachexia, 1 of erysipelas, 2 of tænia solium, 1 of alcoholism, 155 of debility, 1 each of rheumatism and malignant new growth, 9 of tubercle of lung, 4 of anæmia, 16 of diseases of the nervous system, including 7 of hysteria, and 4 of mental diseases, 15 of ophthalmic diseases, 3 of diseases of the circulatory system, 11 of respiratory affections, 61 of diseases of the digestive system, 2 of diseases of the lymphatic system, 1 of urinary diseases, 40 of diseases of the generative system, 1 of diseases of the organs of locomotion, 3 of diseases of the connective tissue, 9 of skin diseases, 1 of vegetable poison, and 6 of injuries. The causes of death were enteric fever 2 cases, measles, dysentery, malarial cachexia, puerperal insanity, pneumonia, diarrhœa, peritonitis, and pelvic cellulitis, 1 case each.

**Children.**—The average strength of children was 1,154; there were 646 admissions into hospital and 33 deaths, equal to the ratios per 1,000 of 559·8 and 28·60, which are less than the corresponding rates in the previous year by 18·5 and 18·36 respectively. The admissions were 53 for measles, 7 for chicken-pox, 5 for dengue, 11 for whooping-cough, 4 for mumps, 55 for simple continued fever, 1 for enteric fever, 6 for dysentery, 154 for malarial fevers of which 10 were for remittent fever, and 11 for malarial cachexia, 1 for parasitic diseases, 4 for immaturity at birth, 96 for debility, 1 for rheumatism, 2 for tubercular diseases, 3 for anæmia, 14 for diseases of the nervous system of which 9 were for infantile convulsions, 72 for eye diseases, 42 for respiratory affections, 79 for diseases of the digestive system, of which 21 were for teething, 1 each for urinary diseases and diseases of the organs of locomotion, 2 for diseases of the connective tissue, 12 for skin diseases, 3 for vegetable poison, and 17 for injuries. The deaths were 5 from infantile convulsions, 4 each from immaturity at birth, teething, and diarrhœa, 2 each from remittent fever, inflammation of brain membranes, and acute bronchitis, and 1 each from debility, tubercle of lymphatic glands, anæmia, tetanus, bronchitis, pneumonia, atelectasis, colic, peritonitis, and asphyxia from submersion.

**SANITARY CONDITIONS.**—With regard to the sanitary condition of the different districts and stations, and the health of the troops in them, the following information is taken from the report of the Principal Medical Officer, Surgeon-Major General J. Warren.

*Bombay.* *Poona.*—The sanitary state of the barracks, hospitals, and camps, was very satisfactory during the year and there was no over-crowding. At Ghorpuri four of the old barracks have been re-roofed and furnished with ridge roofs. No. 5 of the newer barracks has had shutters put up on the west side, and the plantation, which was planted a few years ago as an experiment, removed, the opinion being that it had no good effect. Malarial fevers and venereal disease caused the great majority of admissions. The diseases of venereal origin caused 886 admissions, more than a third of those admitted for all causes, this is considerably higher than in 1892. The number admitted for malarial fevers was somewhat greater than last year, being 717 compared with 648; 374 of the admissions were from Ghorpuri, and 343 from Wanowrie. Small-pox was very prevalent in the neighbourhood and 10 cases occurred, one of which proved fatal. All attacked bore marks of vaccination and re-vaccination. Of 3 cases of gunshot wound treated 1 was caused by the Lee-Metford rifle and self-inflicted, the bullet entered at a point anteriorly just below the surgical neck of the humerus, chipped off a small fragment of the bone and without injuring the axillary vessels or brachial plexus, passed out posteriorly a little lower down. The wound was dressed antiseptically and healed in a most satisfactory manner, a part of the pectoral muscle was carried away, which will lead to a cicatrix, but the arm will probably be a useful one. In another case a small bullet from a Quackenbush rifle entered the chest just above the pericardium and lodged in the lung, where it remains imbedded; there were no serious symptoms and the man has since gone to England time-expired.

*Kirkee.*—There is still considerable overcrowding of the men of the European Infantry, but their general health does not seem to have suffered from it. The sanitary state of the barracks and hospitals was satisfactory during the year, and, except for the prevalence of venereal disease, the health of the men was very good. Fevers were less prevalent than last year; taking malarial and simple continued fevers together, there was a decrease of 36 cases. Venereal disease gave rise to 362 admissions compared with 268 in 1892. The class showing greatest increase was primary syphilis.

*Ahmednagar.*—The general health, compared with previous years, was very satisfactory during the year. The medical officer in charge believes that the spread of temperance among the troops at the station has had a good deal to do with this. The sanitary state of barracks and hospitals was satisfactory. The drainage from the married quarters has been improved. The water supply from the Bhingar aqueduct was of good quality, but the Medical Officer thinks that there are risks of contamination while water is being drawn at the various shafts, and recommends that all should be closed and a pump fitted to each, and there is no doubt that this would ensure greater purity than at present. This has been recommended, but no funds are available. Cholera was epidemic in the Ahmednagar District for months, being first reported early in June, when all the villages surrounding the station were placed out of bounds. Two cases occurred among the troops, the first on the 8th August, the second on the 3rd October, both proved fatal. The first case was of a very intemperate man, who admitted that on the day prior to admission he had drunk freely of water from a chattri used by the labourers in the remount depôt, who came from the cholera-stricken villages around, he had suffered from diarrhoea for at least two days before admission. In the second case no cause could be assigned. A mild case of small-pox was imported. Malarial fevers were of a very mild type, and there were only 5 cases of simple continued fever. Venereal disease accounted for 38 per cent. of all the admissions, which compares very unfavourably with the year 1892, when the percentage was only 25. The health of officers, women and children was on the whole good, though nearly every European child in the station had whooping cough of a severe type.

*Satara.*—The sanitary condition throughout the year was very satisfactory. The floor of the upper storey of the barrack in the fort was laid with wood during the year, which has been a great improvement. In the lower floor cement was put down, but it cracks, wears away, and produces dust. It is intended to replace it also by wood. The general health has, with the excep-

tion of venereal disease, been very good. Venereal diseases gave rise to nearly half the admissions, 143 out of a total of 238. There were no deaths due to disease, but two men died out of hospital from injuries to the head; in one case owing to the man having dived into too shallow water, and the other to a man falling over the fort wall at night. The health of officers, women, and children was very satisfactory.

*Purandhur.*—The year was a remarkably healthy one, the admissions from a nearly equal strength being 81 less than in 1892, and, with the exception of a case of abscess of liver and 3 of enteric fever (one of which was contracted elsewhere), there were really no serious cases. 347 men arrived or changed during the year, and of these 211 returned to their stations improved by their stay. The quality of the bread supply shows at last a decided improvement. The roof of the main building of the hospital leaks somewhat in the rains, but a new one has been sanctioned, also clerestory windows to improve the lighting. A new roof is also to be put on the upper block of servants' quarters. A cantonment latrine has been opened, which is used by the servants in the upper block of quarters. One of the two tanks which supplied washing water was considered not to be in a satisfactory sanitary condition; both were emptied and cleaned out.

*Mhow.*—The sanitary condition of the barracks, hospitals, and their surroundings has been very satisfactory during the year. The rainfall was considerably above the average, and generally speaking the year 1893 was an exceptionally healthy one. Four cases of small-pox occurred during the early part of the year, and may be looked on as the continuation of the outbreak of 1892. 3 men and 1 woman were attacked. All recovered. The men had satisfactory marks of vaccination; those of the women were faint.

*Nasirabad.*—The sanitary condition of the barracks and hospitals was satisfactory during the year and there was no overcrowding. The year was an exceptionally cool and healthy one. Venereal disease caused 215 admissions, compared with 151 in 1892 and 165 in 1891. The general health of women and children was good.

*Neemuch.*—The sanitary conditions of barracks and hospitals was satisfactory throughout the year. No alterations were made. There was no overcrowding. Malarial fever gave the largest number of admissions, there being 661 admissions compared with 490 in 1892, most of the cases were of a mild character, but some were severe, the same individual appearing again and again for treatment. Venereal disease gave the next largest number of admissions. The health of officers was very good, that of the women not so much so, but the same women repeatedly came sick, whilst others enjoyed good health. Generally speaking the health of the children was good.

*Indore.*—The sanitary condition of barracks and hospitals was satisfactory during the year. The health of the troops was good, there were 6 fewer admissions than last year.

*Taragarh.*—The sanitarium was opened on the 1st of April and closed on the 30th September. The sanitary condition of barracks and hospital was satisfactory and there was no overcrowding. 172 convalescents were sent from Nasirabad, of these 106 gained weight and 66 lost it. The women and children sent up for change of air generally benefited by the change. A case of enteric fever, which terminated fatally, occurred in April, nothing to account for it could be detected.

*Khandwa.*—This rest camp was opened for the reception of troops from 1st January to 11th April and from 26th September to 31st December. During the year 219 officers, 11,028 men, 235 women and 374 children passed through the camp, only one man was admitted to hospital, he suffered from a not very severe attack of pneumonia and was able soon to join his corps. A death out of hospital from drowning occurred.

*Colaba.*—The sanitary condition was generally good and there was no overcrowding of barracks. The hospital accommodation is, however, still quite unequal to the requirements of the station, particularly during the trooping season, and patients had to be treated in tents during the fair season and in the verandahs during the monsoon. The general health was good. During the months of August, September, and October malarial fevers, mostly of a mild type were prevalent, the cause being probably the heavy rainfall. Ague was,



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however, less prevalent than in 1892, there being 238 cases compared with 320 in that year, the majority were mild, yielding readily to treatment, but two were severe and accompanied with mæna and collapse. There were no epidemics during the year. Simple continued fever of a mild character gave rise to 155 admissions.

*Deolali.*—The sanitary condition of the barracks and hospitals was satisfactory, and there was no overcrowding, tents being used when required; two barracks were used to supplement hospital in September and October, affording accommodation for 48 sick in four rooms. New quarters for four warrant medical officers have been occupied, and the quarter formerly used by the apothecary in charge has been converted with benefit into a ward for six beds. Some minor improvements in the surface drains have been effected, and fresh ground has been taken up for the disposal of night soil. The water supply of hospital was good, but that of the barracks and camp showed a falling off in quality, owing to the periodical cleaning of the wells having been neglected at the proper time. This, however, does not appear to have effected the health of the troops in any way. The general health of the troops passing through was good, but the men of detachment of 1st Loyal North Lancashire Regiment from Kamptee were sickly. There were no epidemics. Small-pox was prevalent in the neighbourhood, and one man of the detachment was attacked; he had good primary marks, but no marks of secondary vaccination. The disease was probably contracted in camp, where several of the families of the followers were under treatment.

*Khandalla.*—The sanitarium was open from the 1st January to the 1st June, and from the 1st October to the end of the year. The sanitary condition was satisfactory. The Soldiers' Institute reported last year as under construction has been completed and taken into use. The ventilation of the guardroom and cells has been improved. Accommodation for hospital servants and store-keeper still requires improvement. Almost all the convalescents sent to the sanitarium improved in health.

*Deesa.*—The sanitary condition of the station was satisfactory, owing to the excessive quantity of rain during the year (almost unprecedented). There was an unusual number of admissions for malarial fevers, and the men were much debilitated as a result. The barracks leaked considerably, and the floors were often almost flooded. In the earlier part of the year there was some overcrowding, but it was remedied by the use of tents, and by sending a large number of men to Abu. Addition to the accommodation was also made by the conversion of some of the small patcheries into dormitories by the removal of partition walls. Two extra latrines were erected. Up till the beginning of rains the health of the troops had been good.

*Ahmedabad.*—The sanitary state of the barracks, hospital, &c. was satisfactory throughout the year. After the rains the water supply was found to be in an unsatisfactory state, and all drinking water was boiled before use. The wells are now being improved. 105 men were sent to Mount Abu for change at different periods during the hot weather, and as the battery Royal Artillery was very sickly from the previous bad season, and it was considered that for many of the cases a more agreeable climate would be beneficial, a few convalescents were sent to Bombay, Khandalla, and Purandhur during the season with most beneficial results. The health of officers was very good, a mild case of small-pox contracted in Poona by an inspecting officer was treated. The health of the women and children was only fair. One woman suffered from a severe attack of enteric fever in March, but recovered. Fevers and diarrhoea were the principal causes of sickness of the children; one died from acute bronchitis.

*Abu.*—The sanitary condition of barracks and hospital was satisfactory. Owing to the rains having set in earlier than usual there was a certain amount of overcrowding in barracks, those men who had been in tents being accommodated in the verandahs. There was also some overcrowding of the hospital in the months of May, June, July, and August owing to the large number of sick during that period, but there was no evidence of this acting injuriously. Sanction was given to the temporary addition of 20 beds to the station hospital, making with the female ward a total of 47. Quinine was issued prophylactically with satisfactory results during the malarious period

from October to middle of December. The first party of convalescents and young soldiers reached the station in the middle of March, and others continued to be sent up during the hot months. Ague, as usual, gave rise to the greatest number of admissions, but the large majority of those admitted had previously suffered from the disease in the plains.

*Aden.*—The sanitary condition of the barracks was satisfactory: the last block of the new artillery barracks was completed and occupied, and there is now no overcrowding. An alteration was made in the disposal of the night soil; it is now taken in carts and buried in Gold Mohur Valley instead of near the cemetery. The utterly inadequate and unsuitable character of the hospitals has been so frequently described that no more need be said. The sanitary condition was kept as good as it could be under the circumstances, but owing to the great amount of sickness the Regimental Institute at Steamer Point had to be used as a hospital ward and tents used at the Crater Position. There was a great diminution in the number of cases of ague admitted, there being 538 against 1,354 in 1894. A large number of mild cases were not admitted to hospital, but this was also the case in the previous year. It is probable that a great deal of this improvement is due to the abandonment of the Isthmus position, which was so unhealthy in 1892.

*Karachi.*—The sanitary condition of barracks and hospitals was very satisfactory. During the first half of the year the health of the troops was very good indeed, but it began quietly and insidiously to deteriorate during the third quarter, and in the last was very satisfactory. The men of the 47th Field Battery were the most sickly. The increase in sickness was entirely due to malarial diseases. Many cases were complicated with malæna. The Medical Officer says, "This came on as a new disease, and occurred only among men saturated with malaria, among the attacked I could not find any symptoms of scurvy. The onset was usually sudden, the patient during an attack of fever had one or two loose motions followed quickly by extensive hæmorrhage and consequent collapse." The weather in 1893 was all that could be desired, the heat in the hot weather not excessive, the rains moderate and seasonable, and October, generally a disagreeable month, was cool and pleasant, so that something beyond the climate must be looked for as a cause of the sickness; regarding this the Medical Officer remarks, "the water supply is excellent, and is extensively used for gardens, road watering and domestic purposes. It was first laid on in 1883, but there was no corresponding alteration or provision made for its removal, there are only a few shallow surface drains, which slowly carry off some of the rain water, consequently the soil is more or less water-logged, and is daily becoming worse. The native population also suffered more than usual from malarial fevers, and the rise in the level of sub-soil water is probably the cause of the increased sickness," and the Principal Medical Officer concurs with this opinion, though he does not think it would cause malæna. The 47th Battery R.A. probably suffered more than the Garrison R.A. or British Infantry as they are not so well housed.

*Hyderabad.*—The sanitary state of the barracks and hospital was very satisfactory during the year. There was no overcrowding. The general health of the troops was good. A case of severe scarlet fever occurred in March. The patient was a young soldier of the Royal Fusiliers, and there is no evidence of the man having been exposed to the contagion of scarlet fever prior to his attack.

Ague was prevalent in the cold months; there were 227 admissions. Venereal disease gave rise to 104 admissions. Four cases of heat apoplexy, one fatal, occurred in June.

The general health of officers, women and children was good.

*Kamptee.*—The sanitary condition of barracks and hospital was satisfactory. There was slight overcrowding of the hospital in July. The barracks have been improved by the conversion of a range of married quarters into single men's barracks by opening up partitions. Each can now accommodate 17 men. These quarters require to have double tiles to make them all that could be wished. Part of the hospital was re-roofed, and leakage is not expected in future. Additional accommodation has been provided for 16 hospital servants, for an officers' ward, and wards for special and ophthalmic cases and for prisoners. The urinals have been improved and a new cook-house is under

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construction. The year on the whole was a healthy one, and there was a marked immunity from malarial fevers, which the medical officer attributes to the prophylactic use of quinine and the care taken to see that the men clothed themselves properly and avoided chills. The admissions for ague were 147, against 466 in previous year. The most feverish months were June, July, and August; the ratio of admissions per 1,000 during these three months was 26·2, against 208·2 in 1892. No men were sent to Deolali for change this year. The health of officers, women, and children was satisfactory.

*Sitabuldi.*—The sanitary state of barracks and hospitals was satisfactory during the year. New latrines were erected outside the entrenchment and answer admirably. The night latrines at the ends of each wing of barracks have also been improved. The general health of the troops was good, the admissions, 94, being five less than in 1892. The only death which occurred was from heat apoplexy. Venereal disease gave rise to the greatest number of admissions, being 44, an increase of 6 over last year.

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## XIV.—ON THE HEALTH OF THE TROOPS SERVING IN EGYPT.

*Sickness and Mortality.*

The average strength of British troops serving in Egypt was 5,073 warrant officers, non-commissioned officers, and men. The force serving in the Command consisted of one squadron of the 1st Dragoon Guards, from the commencement of the year until the end of March, when it proceeded to England on relief by the 7th Dragoon Guards from India. Throughout the year there were present the 10th Battery, Eastern Division, Royal Artillery, the 24th Company, Royal Engineers, the 1st Battalion, South Wales Borderers, Mounted Infantry, detachments Army Service Corps, Medical Staff Corps, Ordnance Store Corps, Army Pay Corps, and Garrison Staff.

The following, present at the commencement, left during the year:—The 1st Battalion, Dorsetshire Regiment, at the end of September for India, and the 1st Battalion, South Staffordshire Regiment, at the end of May for England. The 32nd Field Battery, Royal Artillery, arrived from England in March, the 1st Battalion, East Yorkshire Regiment, from South Africa in June, the 2nd Battalion, South Staffordshire Regiment, from England in March, and the 2nd Battalion, South Lancashire Regiment, from Malta in February; all these corps remained in the Command to the close of the year. In addition, the 2nd Battalion, Devonshire Regiment, arrived from India at the end of January, and left again for England at the end of March, and the 1st Battalion, Royal Highlanders, arrived from Gibraltar at the beginning of February, and left for South Africa after a stay of one month.

The stations occupied during the year were Cairo and Alexandria; the general health of the troops was not as satisfactory as it was in the preceding year.

In the subjoined table will be found the principal statistics of sickness, mortality, and invaliding among the troops:—

1893. Average Strength.	Admissions.	Deaths			Invalids		Constantly Sick.	Ratios per 1,000 of Strength.				
		In the Command.	Of Invalids.	Total.	Sent Home.	Finally Discharged.		Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
5,073	6,753	68	1	69	72	40	417·15	1331·2	13·60	14·19	9·66	82·23

Compared with corresponding ratios in the previous year there is an increase, 311·9 per 1,000, in the ratio of admission, and one of 14·39 in that of constantly sick, but a fractional decrease, ·58, in the death rate. In comparison with average ratios for the preceding 10 years, the increase equals 131·2 in the case of admission, and 9·94 in that of constant inefficiency; but

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is a decrease of 9·65 in that of mortality. The average sick time to each there soldier was 30·01 days, which is longer than the corresponding period in the previous year by 5·18 days, and than the average similar period in the previous 10 years by 3·68 days. The average duration of each case of sickness was 22·55 days, being shorter by 1·81 days than in the preceding year, and longer by ·61 of a day than the decennial average period.

The following table shows the relative sickness in Cairo and Alexandria :—

Stations.	Average Strength.	Admissions.	Deaths.	Ratios per 1,000.	
				Admissions.	Deaths.
Cairo - - - -	4,187	5,550	58	1325·5	13·85
Alexandria - - -	886	1,203	10	1357·8	11·29

Compared with corresponding ratios in the previous year the ratio of admission in Cairo shows an increase of 381·8, and that of mortality one of 5·62, and at Alexandria, the ratio of admission has increased by 158·0, but that of mortality has decreased by 17·09 per 1,000.

In Abstract XL. will be found the principal statistics of sickness and mortality of the different arms of the service, and of the several corps which served in Egypt during the year. The highest admission ratio, 1428·2 per 1,000, was, as was also the case in the previous year, in the infantry, and shows an increase of as much as 318·9; the cavalry gave the next rate, 1292·4, also a considerable increase, which is likewise observed in the next ratio, 1070·6, that of the artillery. The ratio in the engineers, 623·8, shows a decline, and that of the staff and departments, 514·4, a slight increase. The highest mortality rate, 21·58, was in the staff and departments, dependent on six deaths; in the preceding year the highest rate was 16·08 in the infantry. The ratio next in order was 14·81 in the artillery, as compared with *nil* in 1892; and next, 13·96, in the infantry. The lowest death-rate was 4·91 in the cavalry, among whom no death occurred in the preceding year. The highest constantly sick rate, 88·67 per 1,000, was in the infantry, followed by 76·78 in the cavalry, 67·54 in the artillery, 31·50 in the engineers, and 29·93 in the staff and departments. In the previous year the infantry and cavalry also gave the highest ratios, and the staff and departments the lowest. Compared with corresponding ratios in that year, there is an increase in all, except that of the engineers, which shows a decline. Taking individual corps, the highest annual admission rate was 1764·4 per 1,000 in the 1st Battalion, East Yorkshire Regiment, quartered at Alexandria; the next being 1639·3 in the 1st Battalion, Royal Highlanders, at Abbassiyeh, but only for one month; this is followed by 1594·2 in the 2nd Battalion, South Lancashire Regiment, also at Abbassiyeh. The lowest ratios are 623·8 and 715·4 per 1,000 in the 24th Company, Royal Engineers, and the 10th Company, Eastern Division, Royal Artillery, both of which have been some time in the country. The Army Service Corps shows a high death-rate, 35·09 per 1,000, but this is dependent only on two deaths out of a very small strength; and the next, 32·79 in the 1st Battalion, Royal Highlanders, was dependent on two deaths in a small average annual strength, as the regiment was so short a time in the Command. Of corps some time in the country, the 32nd Field Battery of Artillery gave a comparatively high death rate, 21·53, and the 1st Battalion, Dorsetshire Regiment, one of 20·37. The annual ratios of constant inefficiency through sickness were highest in the 1st Battalion, East Yorkshire Regiment, and in the 2nd Battalion, South Lancashire Regiment, 107·58 and 100·89 respectively. The lowest ratios were in the company of engineers and departmental corps.

The following table shows the statistics of sickness and mortality among *Egypt*. the troops according to age :—

Ages.	Average Strength.	Admissions.	Deaths.	Invalids.	Ratios per 1,000.		
					Admissions.	Deaths.	Invaliding.
Under 20 years -	413	615	7	4	1489·1	16·95	9·69
From 20 to 25 years -	2,476	4,281	41	45	1729·0	16·56	18·17
" 25 „ 30 „ -	1,592	1,568	15	15	983·6	9·42	9·42
" 30 „ 35 „ -	375	216	4	4	576·0	10·66	10·66
" 35 „ 40 „ -	176	68	1	2	386·4	5·63	11·36
Over 40 years -	41	7	—	2	170·7	—	48·78
Total -	5,073	6,753	68	72	1331·2	13·40	14·19

It will be seen from the above that the admission rate among men under 20 years of age was high, but it further increased among men between 20 and 25 years of age; in the next quinquennium of age it decreased to little more than half that rate, and through the succeeding quinquennia it still further declined. In the preceding year the highest rate was among men under 20 years of age, with a considerable fall in that among men between 20 and 25 years of age, after which there was a steady decline. Comparing the ratios with the corresponding ones in the previous year, there is an increase in those between 20 and 30 years of age, but a decline in the remainder. With regard to mortality, the highest rate was among men under 20 years of age, that among men between 20 and 25 years being only fractionally lower; among men in the next five years there was a marked decline, with a slight rise among men between 30 and 35, and subsequently a fall. In the previous year the highest death-rate was among men under 20 years of age, but in the next two quinquennia a decrease occurred, after which the rate again rose. With the exception of the death-rate among men between 20 and 25 years of age, all the ratios compare favourably with the corresponding ratios in 1892.

In the succeeding table the influence of service in the country on sickness and mortality is shown :—

Length of Service in Command.	Average Strength.	Admissions.	Deaths.	Invalids.	Ratios per 1,000.		
					Admissions.	Deaths.	Invaliding.
Under 1 year -	3,270	5,372	50	49	1704·0	15·29	14·98
From 1 to 2 years -	624	648	6	8	1038·5	9·62	12·82
" 2 „ 3 „ -	342	166	2	3	696·0	8·26	12·40
" 3 „ 4 „ -	371	247	7	6	665·8	18·87	16·17
" 4 „ 5 „ -	169	79	3	2	467·5	17·75	11·83
" 5 „ 10 „ -	393	41	—	4	104·3	—	10·18
Over 10 years -	4	—	—	—	—	—	—
Total -	5,073	6,753	68	72	1331·2	13·40	14·19

The highest admission rate is, it will be observed, among men in their first year of service in Egypt; among men in their second year the rate has fallen, but it is still high; after this a further decrease took place, which continued through each year of service in the country. Except that the greatest amount of sickness was among men in the second year, the experience of the previous year shows also that with length of service in the country the admission rate in

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each year declines. Compared with corresponding ratios in the preceding year the rates of admission among men in their first, third, and fifth year of service show an increase, but the remainder a decrease. As to mortality, men in their first year of service in the country showed a rather high rate, but this materially decreased among men in their second and third years of service. After this, among men in their fourth year, the death rate increased to its highest; but among men in their fifth year of service in the country it again slightly declined. Amongst men who had more than five years' service in Egypt no death occurred. Compared with the return for the preceding year very little similarity in the sequence of ratios can be traced. Of the individual ratios those among men in their second and third years' service in the country show a decline, but there is an increase in all the rest.

The principal statistics of sickness, mortality, and invaliding among the troops arranged according to the various groups and orders of diseases will be found in Abstract XXXVI.

**GENERAL DISEASES.—Diseases dependent on Morbid Poisons.**—There were 23 admissions for *eruptive fevers*, equal to 4·6 per 1,000, an increase of 1·5 on the last year's rate, but below the average. Among the cases were four of *small-pox*, all of which occurred in Cairo, and were probably contracted in the city. They were all mild, and the men had been re-vaccinated. Of the remaining admissions 15 were from *scarlet fever*, all in Cairo. Three cases occurred in hospital, and one man presumably contracted it while conducting a patient suffering from the disease to hospital. No source of infection could be traced for the other cases. The disease in Egypt is generally of a mild type. Two cases of *measles* occurred, also one of *cow-pox* and one of *chicken-pox*.

*Enteric Fever* caused 104 admissions and 27 deaths, and 16·48 men were constantly sick from this disease. The admission rate, 20·5, and the death rate, 5·32 per 1,000, compare favourably with the corresponding ratios in the previous year, the former showing a decrease of 14·6, and the latter one of 4·99, and in comparison with similar average rates for the preceding seven years the admission ratio has declined by 22·4 and the mortality rate by 6·22. The constantly sick rate has also declined in these comparisons by 3·19 and 3·56 respectively. The per-centage of mortality to attack was 26·0, as compared with 29·3 in the previous year, and with 26·9 the average for the preceding seven years.

The following table shows the relative sickness and mortality from enteric fever during the year at Cairo and Alexandria :—

Stations.	Average Strength.	Admissions.	Deaths.	Constantly Sick.	Ratios per 1,000.		
					Admissions.	Deaths.	Constantly Sick.
Cairo - - -	4,187	89	23	14·36	21·2	5·40	3·46
Alexandria - -	596	15	4	2·12	16·9	4·51	2·39

This table compares favourably with a corresponding return for the previous year as far as Alexandria is concerned. It is seen that the greatest prevalence of the disease was at Cairo in the year under report, while in 1892 the reverse was the case, an extensive outbreak having taken place in that year. At Cairo the ratio of admissions was higher than that in the preceding year by 6·6, and the death rate was higher by ·92. The disease, especially during the summer months, was of a severe type: cardiac failure was frequently the cause of death, and relapse occurred in several cases. Of the admissions 40 occurred in the Citadel Barracks, 21 at Kasr-el-Nil, 25 at Abbassiyeh, and 2 in the Headquarter Barracks. In these barracks the cases were scattered over the quarters, and in no one room or locality was there very great prevalence of the disease, except that in one room in the Citadel six cases occurred, but this was very large and accommodated some 90 men; it was repeatedly, carefully,

and thoroughly inspected, but no insanitary condition could be detected; it was, however, vacated. On the occurrence of every case of enteric fever very thorough investigation of the barrack room, the locality, and its surroundings was undertaken with a view to discover a possible cause, and remove any insanitary condition. With regard to seasonal prevalence, it is observed during the early months of the year there was very little incidence of the disease, but its greatest prevalence, and nearly all its mortality, was in the hot months from May to September, after which it declined somewhat. As to the age of the men attacked 6 were under 20 years of age, 62 between 20 and 25 years, 18 between 25 and 30 years, and 3 over that age; of the latter, one case occurred in a man over 40 years of age. With regard to length of service in the country it is found that no less than 73 cases occurred in men in their first year; of the remainder 6 were in their second year, 5 in their third year, and 5 had over three years' service in the country. At Alexandria the admission and mortality rates were greatly reduced as compared with those recorded in the preceding year. The garrison enjoyed perfect immunity from the disease until the end of October, when it re-appeared. The medical officer in charge notes that nearly half the admissions and fully half the deaths occurred amongst the youths composing the drafts received by the 1st Battalion, East Yorkshire Regiment. Of the 15 cases two were under 20 years of age, and 11 between 20 and 25 years, and two over that age. The cases were mostly severe, and had a tendency to recrudescence or relapse. All the fatal cases exhibited marked disease or ulceration of the glandular apparatus of the small intestines.

*Simple Continued Fevers* caused 521 admissions, the admission rate being 102.9 per 1,000, a decline, however, of 17.0 from the corresponding rate in the previous year, and of 40.6 from the average rate of the preceding seven years. The constantly sick rate from these fevers was 4.19 per 1,000, lower by 1.38 than in 1892, and by 1.47 than the average rate.

*Typhus Fever*.—One case occurred at Cairo in a man quartered at Abbassiyeh. It proved fatal.

*Dysentery* was the cause of 90 admissions and 8 deaths. The ratio of admissions was 17.7 per 1,000, an increase of 2.9 on the previous year's rate, but considerably below the average rate for the preceding seven years.

*Malarial Fevers*.—152 cases are returned, being in the ratio of 30.0 per 1,000, an increase of 5.5 on the corresponding rate in 1892, and of 16.0 on the septennial average rate. All the admissions were due to ague, and as many as 143 occurred at Cairo, almost exclusively among men of the 7th Dragoon Guards from India, and the detachment of South Wales Borderers from Aden. At Alexandria 9 cases were returned, one fatal case occurred out of hospital.

*Septic Diseases*.—Under this head 6 cases of erysipelas are shown against 2 in the previous year. All occurred at Cairo.

*Venereal Diseases* were, as usual, very prevalent, and, including simple venereal ulcer, caused nearly a third of the total number of admissions. The admissions for *primary syphilis* were 287 in number, equal to 56.6 per 1,000, an increase on the previous year's rate of 14.1, but below the average rate by 8.8. Including simple venereal ulcers, which caused 777 admissions, and for which 50.78 men were constantly sick, the admission rate for primary venereal sores was 209.8 per 1,000, an increase of 86.7 on the previous year's rate, and above the average rate. *Secondary syphilis* caused 232 admissions, or 45.7 per 1,000, which differs only by an increase of 1.5 from the similar ratio in the previous year, but is above the seven years' average rate by 14.0. The admissions for *gonorrhœa* numbered 775, equal to a ratio of 152.8 per 1,000, an increase of 42.5 on the rate in 1892, and of one-third on the average rate. The total admission rate for all forms of venereal diseases amounted to 408.3 per 1,000, which is in excess of that in the previous year by 130.7 per 1,000, and also above the septennial average rate. The amount of constant inefficiency from these diseases was equal to 31.73 per 1,000, greater than in 1892 by 8.32, and above the average.

*Parasitic Diseases*.—22 admissions are returned, all but one from Cairo; they were mostly on account of *tenia solium*.

*Alcoholism* caused 15 admissions, of which 5 were cases of delirium tremens, but no death occurred.

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*Scurry.*—One case was treated in the station hospital at Cairo.

*Debility* was the cause of 98 admissions, mostly the result of febrile attacks; the ratio, 19·3 per 1,000, differs very little from that in the preceding year, but is a good deal below the average rate.

*Rheumatism.*—212 admissions are returned, 22 being cases of rheumatic fever, one of which proved fatal. The admission ratio, 41·8 per 1,000, is higher than that in the preceding year by 19·2, and also considerably above the average rate for seven years.

*Tubercular Diseases* caused 11 admissions and 3 deaths (one being that of an invalid after leaving the Command), as compared with 2 admissions and no deaths in the preceding year. All the cases occurred at Cairo, and were due to tubercular disease of the lungs.

*Other Diseases* of this group were the cause of 43 admissions or 8·5 per 1,000. They comprised 33 cases of non-malignant new growth, 5 of scrofula, 3 of anæmia, 1 of purpura, and 1 of diabetes.

**LOCAL DISEASES.**—*Diseases of the Nervous System* caused 106 admissions, the ratio being 20·8 per 1,000, an increase of 7·6 on the last year's rate, and considerably above the average rate for the previous seven years. Among the cases treated there were 57 of neuralgia, 16 of vertigo, 9 of epilepsy, and 13 of mental affections. There were 3 deaths, 2 from inflammation of the cerebral membranes, and one from mania.

*Diseases of the Eye.*—372 admissions are returned, equal to a ratio of 73·3 per 1,000, being above the previous year's rate by 34·9 per 1,000, and also higher than the corresponding average rate. The chief cause of admission was conjunctivitis, very nearly two-thirds of the cases being due to this affection; they were mostly mild and readily amenable to treatment.

*Diseases of other Organs of Special Senses* gave an admission rate of 21·1 per 1,000, as compared with 15·5 in the preceding year, and 14·1 the average rate. All the admissions were for aural disease, principally cases of inflammation of the external meatus.

*Diseases of the Circulatory System* caused only 23 admissions, but 2 deaths. The admission ratio, 4·5 per 1,000, is less by 5·5 than in 1892, and by 10·0 than the average rate. The cases comprised 11 of palpitation, 8 of valve disease of the heart, one fatal, 3 of affections of the veins, and one aneurysm of the abdominal aorta, fatal.

*Diseases of the Respiratory System* were at the rate of 88·3 per 1,000, above the last year's rate by 39·6, and above the average rate of seven years by 55·1. The principal causes of admissions were, bronchitic affections 280 cases, pneumonia 118, and pleurisy 37. There were 13 deaths, 12 from pneumonia, and one from pneumonic phthisis. The majority of the cases of pneumonia were severe in type.

*Diseases of the Digestive System* caused 959 admissions and 7 deaths. The admission ratio, 189·0 per 1,000, exceeds that of the previous year by 49·4, and is above the seven years' average by 36·6. Affections of the mouth and throat caused 311 admissions, dyspepsia 179, and diarrhoea 171. The fatal cases were, 2 from hepatic abscess, and 1 from hepatitis, internal intestinal strangulation, intestinal ulceration, gastritis, and sloughing sore throat respectively.

*Diseases of the Lymphatic and Glandular System* gave an admission rate of 16·2 per 1,000, very nearly double that in the preceding year, but below the average rate of seven years. The cases were of ordinary character.

*Diseases of the Urinary System.*—9 admissions are returned against 7 in the preceding year. The admissions included 2 for Bright's disease.

*Diseases of the Generative System* caused an admission rate of 178·4 per 1,000, an increase of 76·5 on the last year's rate, and still more in excess of the average rate. More than three-fourths of the admissions were due to simple venereal ulcers, and of the remainder the principal causes were balanitis, orchitis, and urethral stricture.

*Diseases of the Organs of Locomotion* were the cause of 54 admissions, or 10·2 per 1,000, less by 5·3 than in 1892, but above the average rate. Synovitis was the most frequent disease, 33 admissions being returned.

*Diseases of the Connective Tissue* gave an admission rate of 38·4 per 1,000, more than double that of the previous year and above the average. The cases, however, were of ordinary character.

*Diseases of the Skin.*—The number of admissions 320, gave a ratio of 63·1 *Egypt.* per 1,000, an increase of 9·6 on the last year's rate, and of 7·1 on the average rate. The chief causes of admission were boils, eczema, ulcers, and scabies.

*Poisons.*—This order is represented by 10 admissions from poisoned wounds from stinging insects.

*Injuries.*—There were 557 admissions from injuries, and 3 deaths. The admission ratio, 109·8 per 1,000, is in excess of that of the previous year by 26·3, and above the average by 16·5. There were 6 cases of general injury, namely, 2 of heat stroke, fatal, and 4 of multiple injury, two of which were the result of accidents on the railway, one at Alexandria, in which the left leg was so damaged by crushing that amputation was necessary, but the man recovered and was eventually invalided: the other at Cairo necessitated amputation of both legs, and after some time further amputation was required; the man then did well, as far as the operation was concerned, but tubercle of lung supervened, which proved fatal. One death by drowning took place at Alexandria in the Mahmoudieh Canal, though whether by accident or through foul play has not yet been arrived at. Among local injuries the chief necessitating admission were contusions, wounds, and sprains. There were also 26 cases of fracture, and 4 of dislocation.

*Invaliding.*—The number of men invalided during the year was 72, being in the ratio of 14·19 per 1,000 of strength, which is lower by 9·67 than the corresponding rate in the previous year, and considerably below the similar average rate for the preceding ten years. In the arms of the service the highest invaliding rate was 27·52 per 1,000 in the engineers, the next 24·57 in the cavalry, followed by 17·98 in the staff and departments, 12·72 in the infantry, and 11·15 in the artillery. Compared with last year's results, the rates in the cavalry and departmental corps have increased, but the remainder decreased. Of individual corps with fair annual average strength, the Company of Engineers gave the highest invaliding rate, 27·52 per 1,000; next the 7th Dragoon Guards, 27·10; followed by the 10th Company, Eastern Division, Royal Artillery with 23·08. Taking the ages of men invalided, it is found from a table on a previous page that the highest ratio per 1,000 occurred among men between 20 and 25 years (excluding a very high rate among men over 40 years, dependent on the invaliding of two men out of a very small annual average strength). The invaliding among men between 30 and 35 years, and 35 and 40 years of age come next, 10·66 and 11·36 respectively, followed by that among men under 20 years and between 25 and 30 years of age, 9·69 and 9·42 respectively. In the previous year after the invaliding among men under 20 years of age, which was somewhat high, there was an increase during the remaining periods of age, the highest rate, except that of men over 40 years of age, whose numerical strength was very small, being among men between 30 and 35 years of age. All the ratios at the different ages compare favourably in the year under notice with the corresponding ones in the preceding year. With regard to invaliding according to length of service in the country, it will be seen that the ratios did not vary very greatly. They decreased somewhat from that among men in their first year of service in the country to that among men in their third year; the rate increased among men in their fourth year, and again fell in those among men in their fifth year and over five years' service in the country. There is no similarity in the sequence of these invaliding ratios as compared with those in the similar return for the preceding year, which shows high rates among men in their second and third years of service in the country, and low ones after that period. The principal causes of invaliding were diseases of the nervous system 14 cases, equal to 2·76 per 1,000, which, however, is a lower ratio than that in the previous year by '79; among the cases were 8 of mental disease. Diseases of the digestive system caused the invaliding of 8 men (including 5 for hernia), or 1·58 per 1,000, a decline of '35 from the last year's rate; debility was next in order, 7 cases, chiefly after attacks of fever, or 1·38 per 1,000, a decline of 2·17; followed by diseases of the generative system, urethral stricture, varicocele, and orchitis, 6 cases, or 1·18 per 1,000, an increase of '54; and enteric fever, dysentery, tubercle of lung, &c., 3 cases each.

The number of men finally discharged the service by invaliding was 49, equal to a ratio of 9·66 per 1,000, almost the same as in the previous year,

*Egypt.*

but below the decennial average by 15·20 per 1,000. The disabilities necessitating discharge were principally debility, 79 per 1,000, nervous disorders 1·58 (including ·59 for mental disease), diseases of organs of special senses ·99, diseases of the circulatory system 1·38, digestive disorders 1·18, diseases of the organs of locomotion ·79, and febrile diseases, generative diseases, and injuries ·59 respectively.

*Officers.*—The average strength was 168, and there were 173 cases of illness recorded and 2 deaths. The ratio of prevalence of sickness was therefore 1029·8, and that of mortality 11·90 per 1,000, the former showing an increase of 54·6, but the latter a decrease. Among the cases treated were 3 of scarlet fever, 57 of continued fevers, including 5 of enteric fever, of which 2 proved fatal, 5 of dysentery, 8 of malarial fever, 9 of respiratory affections, 30 of affections of the digestive system, and 20 of injuries, including 2 of concussion of the brain. Six officers were invalided during the year, equal to a ratio of 35·71 per 1,000. The causes of invaliding were enteric fever 2 cases, and debility, pneumonia, diarrhoea, and dislocation, 1 case respectively.

*Women.*—The average strength was 225, and there were 520 cases of illness, and 5 deaths. The ratio of prevalence of sickness was therefore 2311·1 per 1,000, an increase of 515·7 on the corresponding rate in the previous year. The death rate, 22·22 per 1,000, also shows a considerable increase, only one death having occurred in 1892. The principal causes of sickness were continued fevers 66 cases, including 3 of enteric fever (2 of which died); debility 76 cases, ophthalmic affections 104, nearly all conjunctivitis, diseases of the respiratory system 33, including 1 fatal of pneumonia, and diseases of the digestive system 129, including two of abscess of the liver, one of which was fatal. In addition to the deaths above alluded to there was one from tubercle of lung.

*Children.*—The average strength was 365. The number of cases of illness was 994, equal to a ratio of 2723·3 per 1,000, and of deaths 33, equal to 90·41 per 1,000. Compared with the corresponding ratios for the previous year, sickness was increased by 257·5, and mortality by 22·03 per 1,000. The principal causes of sickness among children were conjunctivitis 394 admissions, diarrhoea 129, bronchial affections 99, and simple continued fever 63 cases. Among the remainder may be mentioned 13 cases of measles, 4 of scarlet fever, 3 of diphtheria, and 1 of enteric fever. The deaths were 13 from diarrhoea, 5 from debility, 2 each from measles, diphtheria, convulsions, and teething, and 1 from simple continued fever, congenital syphilis, malformation, bronchitis, enteritis, nephritis, and oedema of the glottis respectively.

*SANITARY NOTES.*—The Principal Medical Officer, Surgeon Colonel W. Nash, M.D., states that the general health of the troops in the Command during the past year was not very satisfactory, and compares unfavourably with that of the previous year. There was a slight decrease in the death rate, but the sick rates are increased, more especially at Cairo. The principal cause of this higher rate is considered to be due to the fact that the greater part of the troops had only arrived in the country during the year. Recent arrival and want of acclimatization, no doubt, increase the liability to certain febrile and other diseases, as also the fact that men new to the country are unsettled in their habits, and are exposed to many temptations, which lead to an increase of some diseases quite unconnected with climatic influence. The sanitary state of barracks and hospitals was carefully attended to. The vicinity of barracks, in some instances, is not satisfactory. In Cairo, at Kasr-el-Nil barracks, on the north side is situated the dirtiest part of the city. At the Citadel the native dwellings are in close proximity to the walls, and at Abbassiyeh barracks the village of Adli has frequently been brought to notice on account of its insanitary condition.

A considerable number of improvements have been carried out during the year, amongst others the thorough overhauling and ventilating of the drainage of the gymnasium barracks at Abbassiyeh, and alterations to the drainage at Kasr-el-Nil. Some quick-growing trees have been planted in the Citadel. The hospital garden has been improved and relaid. At Alexandria the new barrack huts at Mustapha have progressed rapidly, and six are now completed and occupied. Officers' quarters have also been provided.

## XV.—ON THE HEALTH OF THE TROOPS ON BOARD SHIP.

*Troops on Board Ship.*

The troops embarked during the year, as shown by the returns received in the Medical Division, War Office, were :—

I. Troops proceeding on service abroad	-	-	21,318
II. Troops returning from abroad	-	-	13,458
III. Troops proceeding from one station abroad to another	-	-	11,322
IV. Invalids returning to England	-	-	2,148

## I.—TROOPS PROCEEDING ON FOREIGN SERVICE.

The total number of warrant officers, non-commissioned officers, and men embarked for foreign service during the year was 21,318, the equivalent annual strength being 1,371. There were 1,299 admissions and 4 deaths, being in the annual ratios of 94·5 and 2·92 per 1,000 respectively. Compared with the corresponding ratios for the previous year there is a decrease of 141·2 in the admission rate, and one of 3·92 in the death rate, and compared with the average ratios for the previous ten years the former has declined by 167·1, and the latter by 1·26 per 1,000.

The admissions and deaths in the different groups and orders of diseases are shown in Abstract XXXVII.

**GENERAL DISEASES.**—*Diseases dependent on Morbid Poisons.*—There were four cases of *eruptive fever*, three of scarlet fever on board H.M.S. “Serapis,” “C rocodile,” and S.S. “Java,” respectively, and a case of measles on board S.S. “Malacca.” *Enteric fever* caused one admission on board H.M.S. “Serapis,” probably contracted before embarkation. *Other continued fevers* caused 12 admissions, similar in number to, but with a ratio of 4 per 1,000 below that of the preceding year. There were no admissions for *malarial fevers*, and only two for *septic diseases*, both being cases of erysipelas. *Veneral diseases*, as usual, were the chief causes of illness. *Primary syphilis* caused 128 admissions, or a ratio of 93·4 per 1,000, being a decrease as compared with 1892. Including simple venereal ulcer, the ratio was 169·3 per 1,000, 33·3 below that of the previous year. *Secondary syphilis* caused 36 admissions, or a ratio of 26·2, being 15·5 per 1,000 below the previous year. *Gonorrhœa* gave 372 admissions, equal to a ratio of 271·3, or 53·4 per 1,000 less than in 1892. Including all forms of venereal disease, the total admission rate, 466·8 per 1,000, shows a decline, as compared with the preceding year, of 102·2.

*Rheumatism* caused 30 admissions, the ratio 21·9 being 3·9 per 1,000 lower than that for the previous year.

**LOCAL DISEASES.**—*Diseases of the Nervous System* caused 5 admissions, including 2 for mental diseases, and *eye diseases* 16. There were only 2 admissions for *diseases of the circulatory system*. *Diseases of the respiratory system* caused 96 admissions with 2 deaths, the ratio of admission, 70·0 per 1,000, exceeds that of the preceding year by 20·7. *Diseases of the digestive system* gave 129 admissions, or a ratio of 94·1, this is likewise in excess of that for 1892, by 13·7 per 1,000. The ratio of admissions for *diseases of the lymphatic and glandular system*, 14·6 per 1,000, was lower by 6·6 than that for the previous year. The admissions for *urinary diseases* numbered 2 only. *Diseases of the generative system* furnished 166 of the admissions, the ratio, 121·0, being an increase of 21·6 as compared with that for 1892. *Skin diseases* caused 99 admissions, the ratio for which, 72·2 per 1,000, is 50·0 below that of the preceding year. *Injuries* also show a decrease of 16·9 per 1,000 in the ratio of admissions.

The deaths, 4 in number, were due to pneumonia in 2 instances, and to peritonitis and periostitis in one case respectively.

The number of officers embarked was 934, among whom 18 admissions were recorded. The number of women who embarked equalled 844; no death occurred. The number of children embarked was 1,074, among whom 7 deaths occurred from the following causes :—4 from diarrhœa, and one each from inflammation of the stomach, pneumonia, and convulsions.

Troops on  
Board Ship.

## II.—TROOPS RETURNING HOME FROM ABROAD.

The number of effective warrant officers, non-commissioned officers, and men who embarked for England was 13,458, the equivalent annual strength being 814. The number of admissions into hospital was 770, and there were 6 deaths. The annual admission ratio was, therefore, 945·9, and the annual mortality rate 7·37 per 1,000, which are lower than the corresponding ratios in the previous year by 398·6 and 9·90, and than the average similar ratios for the preceding ten years by 152·3 and 4·39 respectively.

The admissions and deaths in the different groups and orders of diseases are shown in Abstract XXXVII.

**GENERAL DISEASES.**—*Diseases dependent on Morbid Poisons.*—No admissions for *eruptive fevers* are recorded. One case of *enteric fever* occurred on board H.M.S. "Euphrates"; the disease is stated to have been contracted prior to embarkation. *Other continued fevers* caused only 12 admissions; this is equal to a decrease in the admission rate of 23·7 per 1,000 as compared with the preceding year. *Dysentery* caused 14 admissions. *Malarial fevers* gave 52 admissions or 63·9 per 1,000, this ratio is lower by 108·8 than that for 1892.

*Veneral Diseases.*—The admissions for *primary syphilis* were 160, being in the ratio of 196·6 per 1,000, higher by 61·3 than that for the previous year. Including simple venereal ulcer, the admission ratio was 253·1, or 14·1 per 1,000 over that for 1892. *Secondary syphilis* caused 38 admissions, equal to a ratio of 46·7; this is lower than that of the preceding year by 27·2. *Gonorrhœa* gave 189 admissions, the ratio for which, 232·2 per 1,000, exceeds that for the previous year by 23·0. Including all forms of venereal disease, the admission rate, 532·0 per 1,000, was 9·9 in excess of that for 1892.

*Alcoholism* caused 3 admissions and *debility* 6. *Rheumatism* gave 22 admissions or 27·0 per 1,000; this ratio is less by 5·6 than that for 1892.

**LOCAL DISEASES.**—*Diseases of the Nervous System* caused 3 admissions, and those of the *eye* 10. One fatal case of *aneurysm of aorta* occurred. *Respiratory affections* caused 49 admissions and 4 deaths, giving ratios of 60·2 and 4·91 per 1,000 respectively. The admission rate is lower by 114·5, and the death-rate by 4·69, than in the preceding year. The principal causes of admission were pneumonia 20 cases, and bronchitis and asthma 9 cases each. The deaths were all due to pneumonia. *Diseases of the digestive system* caused 43 admissions, or a ratio of 52·8, which is lower by 20·1 than that for 1892. *Diarrhœa* and *sore throat* were the principal causes of admission. One death from acute yellow atrophy of the liver occurred. *Diseases of the lymphatic and glandular system* gave an admission rate of 33·2 per 1,000, a fractional increase as compared with last year. *Diseases of the generative system* caused 58 admissions only, and the decrease in the admission rate, as compared with 1892, was 57·3; 46 of the admissions were due to simple venereal ulcer. *Diseases of the connective tissue*, with 20 admissions, gave a ratio of 24·6 per 1,000; this is lower by 13·8 than that for the previous year, and *diseases of the skin*, with an admission rate of 20·9, is lower by 64·5 per 1,000 than that for 1892.

*Injuries.*—39 are recorded; the principal causes were contusions and wounds, 14 cases of each.

*Officers.*—616 embarked; 12 were placed on sick list.

*Women.*—775 embarked; there were no deaths.

*Children.*—1,582 embarked, and there were 9 deaths—3 from debility, 2 each from convulsions and *tabes mesenterica*, and 1 each from pneumonia and bronchitis.

## III.—TROOPS PROCEEDING FROM ONE STATION ABROAD TO ANOTHER.

The number of warrant officers, non-commissioned officers, and men who embarked for transit between one station abroad and another was 11,322, the equivalent annual strength being 533. The number of admissions into hospital was 787 and there were 3 deaths, being in the annual ratios of 1476·5 and 5·62 per 1,000 respectively. Compared with the corresponding rates in the previous year the admission rate has declined by 214·7, and the death-rate

by '04, while in comparison with similar average ratios for the preceding ten years the former is greater by 341.1 and the latter less by '97. *Troops on Board Ship.*

The admissions in the different groups and orders of diseases are shown in Abstract XXXVII.

**GENERAL DISEASES.**—*Diseases dependent on Morbid Poisons.*—*Enteric fever* caused 1 admission, and *simple continued fever* 13. The case of enteric fever, 6 of the cases of simple continued fever, and 67 cases of *influenza* occurred on board the S.S. "Jelunga." There were 3 cases of *dysentery*.

*Malarial fevers* caused 106 admissions and 2 deaths; the admission ratio, 198.9 per 1,000, being higher than that of the previous year by 142.2. The deaths were due to *ague*.

*Venereal Diseases.*—The admissions for *primary syphilis* numbered 75, equal to a ratio of 140.7 per 1,000, a decrease of 102.9 as compared with 1892. Including simple venereal ulcer, the ratio 255.1, is equal to a decrease of 186.8. *Secondary syphilis* caused 13 admissions, a ratio of 24.4; less than in the previous year by 6.8 per 1,000. *Gonorrhœa*, with 178 admissions, gives a ratio of 334.0 per 1,000; this is lower by 102.2 than the rate for the preceding year. Including all forms of venereal disease the total admission rate, 613.5 per 1,000, is lower than that for 1892 by 295.8.

There were 3 admissions for *alcoholism*, and a like number for *debility*. *Rheumatism* caused 15 admissions.

**LOCAL DISEASES.**—The principal causes of admission were *diseases of the respiratory system* 51 cases, *diseases of the digestive system* 43 cases, of the *generative system* 72 cases, and *diseases of the skin* 44 cases. There were no deaths.

*Injuries.*—45 cases occurred; 1, a case of heat apoplexy, proved fatal. The ratio of admission, 84.4, exceeds that of the preceding year by 24.9 per 1,000.

*Officers.*—310 embarked, among whom 11 cases of illness are recorded. *Women*, 354 embarked; no death. *Children*, 512 embarked; 1 death occurred from bronchitis.

#### IV.—INVALIDS RETURNING TO ENGLAND.

The number of invalids embarked for England from foreign stations was 2,148, the equivalent annual strength being 144.6. There were 14 deaths of invalids on the voyage home. The sickness and mortality among these invalids are accounted for in the statistical tables of the Commands from which they were invalided.

#### V.—SANITARY CONDITION OF SHIPS.

The sanitary condition of the different vessels and troopships, and the accommodation provided for the troops on the various voyages, were generally reported to be satisfactory.

ABSTRACT No. I.—TABLE showing the AVERAGE STRENGTH, ADMISSIONS among the TROOPS serving in the UNITED KINGDOM during the

Average Strength in Annual Returns, 100,106. † Average Strength, including Men detached, 102,228.		Admissions into Hospital.	Died			Invalids Dis- charged the Service.
Diseases.			With the Regi- ment.	Absent from the Regi- ment.	Total.	
I.—GENERAL DISEASES.						
GROUP "A."						
Sub-Group I.	Small-pox	8	—	—	—	—
	Other Eruptive Fevers	1,463	13	1	14	—
	Enteric Fever	151	21	1	22	—
	Other Continued Fevers	459	—	—	—	—
	Yellow Fever	—	—	—	—	—
	Cholera	—	—	—	—	—
	Dysentery	46	1	—	1	2
Other Diseases		1,726	3	—	3	—
Total		3,853	38	2	40	2
Sub-Group II.—Malarial Fevers		587	—	—	—	—
Sub-Group III.—Septic Diseases		242	15	—	15	2
Sub-Group IV.	Syphilis, Primary	5,604	—	—	—	—
	" Secondary	3,188	5	1	6	76
	Gonorrhoea	8,838	—	—	—	4
Total		17,720	5	(1	6	80
Sub-Group V.—Hydrophobia, &c.		—	—	—	—	—
GROUP "B."						
Sub-Group I.—Parasitic Diseases		27	—	—	—	—
Sub-Group II.	Scurvy	1	—	—	—	—
	Alcoholism	152	5	—	5	—
GROUP "C."						
Debility, &c.		692	—	—	—	82
GROUP "D."						
Rheumatism		3,609	7	1	8	41
Tubercular Diseases		306	72	6	78	164
Other Diseases		464	14	3	17	41
II.—LOCAL DISEASES.						
Diseases of the—						
1. Nervous System { Nervous Diseases		686	30	1	31	122
2. Eye " { Mental		138	1	—	1	116
3 & 4. Other Organs of Special Senses		1,069	—	—	—	85
5. Circulatory System		898	—	—	—	107
6. Respiratory "		939	42	2	44	368
7. Digestive "		6,128	122	10	132	60
8. Lymphatic and Glandular System		12,917	40	3	43	96
9. Urinary System		1,540	—	—	—	10
10. Generative "		240	15	1	16	34
11. Organs of Locomotion		3,213	2	—	2	28
12. Connective Tissue		850	—	—	—	92
13. Skin		2,461	1	1	2	7
		6,602	—	—	—	22
III.—POISONS		19	7	—	7	—
IV.—INJURIES.						
1. General		26	41	2	43	—
2. Local		9,498	31	2	33	—
3. In Action		—	—	—	—	66
No appreciable disease		357	—	—	—	—
Cause unknown (refers to deaths only)		—	—	1	1	—
General Total		75,234	488	36	524	1,605

\* The average ratios for 10 years will be given in future years. The average ratios for years 1886 to 1894 in

† Ratios of deaths and invalids calculated on this strength.

into HOSPITAL, DEATHS, NUMBERS INVALIDED and CONSTANTLY SICK  
Year 1893, with the Ratios per 1,000 of the Strength.

Average Number con- stantly Sick.	Ratio per 1,000.				* Average Ratio per 1,000 from 1886 to 1892.			
	Admis- sions.	Deaths.	Invalids Dis- charged the Service.	Con- stantly Sick.	Admis- sions.	Deaths.	Invalids Dis- charged the Service.	Con- stantly Sick.
1'26	'1	—	—	'01	'1	—	—	'01
129'42	14'6	'14	—	1'29	7'1	'04	—	'46
23'18	1'5	'21	—	'23	1'3	'28	—	'21
15'71	4'6	—	—	'16	5'3	'02	—	'20
—	—	—	—	—	—	—	—	—
4'43	'5	'01	'02	'04	'7	'03	'05	'07
51'98	17'2	'03	—	'52	16'0	'04	—	'41
225'98	38'5	'39	'02	2'25	30'5	'41	'05	1'35
19'82	5'9	—	—	'20	6'1	'01	'01	'21
19'71	2'4	'15	'02	'20	2'1	'07	'01	'13
579'26	56'9	—	—	5'79	69'7	—	'01	6'35
331'59	31'8	'06	'74	3'31	37'0	'05	'76	3'37
628'04	88'3	—	'04	6'25	94'8	—	'04	6'18
1536'89	177'0	'06	'78	15'35	201'5	'05	'81	15'90
—	—	—	—	—	—	—	—	—
1'06	'3	—	—	'01	'5	'01	—	'01
'04	—	—	—	—	'1	—	—	'01
4'78	1'5	'05	—	'05	2'8	'03	—	'09
47'17	6'9	—	'80	'47	7'5	'01	'97	'51
239'69	36'1	'08	'40	2'40	37'4	'05	'69	2'30
47'25	3'1	'76	1'60	'47	3'6	'97	1'75	'57
39'94	4'6	'17	'40	'40	5'2	'11	'38	'41
43'40	6'8	'30	1'19	'48	7'6	'34	1'15	'52
23'45	1'4	'01	1'14	'23	1'4	'01	'92	'25
69'12	10'7	—	'83	'69	12'1	—	'65	'72
63'67	9'0	—	1'05	'64	7'4	'01	'64	'42
101'53	9'4	'43	3'50	1'01	9'6	'41	3'17	'89
804'90	61'2	1'20	'59	3'05	68'0	1'41	1'00	3'38
376'34	129'0	'42	'84	3'76	105'4	'35	'93	3'12
164'40	15'4	—	'10	1'64	17'5	'01	'10	1'81
22'93	2'4	'16	'33	'23	2'3	'16	'25	'19
206'90	32'1	'02	'27	2'07	38'6	'01	'28	2'38
66'23	8'5	—	'90	'66	7'2	'04	'86	'59
111'44	24'6	'02	'07	1'11	23'0	'02	'09	1'05
256'77	65'9	—	'22	2'57	77'3	—	'20	2'82
'91	'2	'07	—	'01	'2	'04	—	'01
1'88	'2	'48	—	'02	—	'37	'01	'01
400'42	94'9	'32	'65	4'00	99'2	'34	'77	4'06
12'68	3'6	—	—	'13	3'0	—	—	'09
—	—	'01	—	—	—	—	—	—
4414'49	751'6	5'13	15'70	44'10	777'1	5'24	15'67	43'80

the eight years 1886 to 1893 will be given in the Report for 1894; those for the nine  
that for 1895, &c., &c.



ABSTRACT A.—TABLE showing the AVERAGE STRENGTH, ADMISSIONS among the TROOPS stationed in ENGLAND during the

Average Strength in Annual Returns, 72,272. † Average Strength, including Men detached, 73,361.		Admissions into Hospital.	Died		Dis- charged the Ser- vice.	Average Number constantly Sick.			
Diseases.			With the Regiment.	Absent from Regiment.					
I.—GENERAL DISEASES.									
GROUP "A."									
Sub-Group I.	Small-pox . . . . .	5	—	—	—	'95			
	Other Eruptive Fevers . . . . .	1,201	11	1	12	114'71			
	Enteric Fever . . . . .	103	15	1	16	14'08			
	Other Continued Fevers . . . . .	339	—	—	—	12'25			
	Yellow Fever . . . . .	—	—	—	—	—			
	Cholera . . . . .	—	—	—	—	—			
	Dysentery . . . . .	40	1	—	1	4'09			
Other Diseases . . . . .		1,475	2	—	2	44'35			
Total . . . . .		3,253	20	2	31	190'38			
Sub-Group II.—Malarial Fevers . . . . .		404	—	—	—	16'65			
Sub-Group III.—Septic Diseases . . . . .		169	14	—	14	14'18			
Sub-Group IV.	Syphilis, Primary . . . . .	4,731	—	—	—	482'13			
	Secondary . . . . .	2,538	3	1	4	270'20			
	Gonorrhœa . . . . .	6,777	—	—	4	479'72			
Total . . . . .		14,046	3	1	4	1232'06			
Sub-Group V.—Hydrophobia, &c. . . . .		—	—	—	—	—			
GROUP "B."									
Sub-Group I.—Parasitic Diseases . . . . .		20	—	—	—	'42			
Sub-Group II.	Scurvy . . . . .	1	—	—	—	'04			
	Alcoholism . . . . .	123	5	—	5	4'06			
GROUP "C."									
Debility, &c. . . . .		531	—	—	50	36'12			
GROUP "D."									
Rheumatism . . . . .		2,770	6	—	6	182'87			
Tubercular Diseases . . . . .		221	48	4	52	54'08			
Other Diseases . . . . .		343	10	2	12	30'70			
II.—LOCAL DISEASES.									
Diseases of the—									
1. Nervous System	{ Nervous Diseases . . . . .	517	25	—	25	37'55			
	{ Mental " . . . . .	91	1	—	1	15'12			
2. Eye . . . . .		769	—	—	—	47'80			
3 & 4. Other Organs of Special Senses . . . . .		733	—	—	—	52'83			
5. Circulatory System . . . . .		711	40	1	41	78'20			
6. Respiratory " . . . . .		4,328	98	7	105	214'60			
7. Digestive " . . . . .		9,968	31	2	33	284'65			
8. Lymphatic and Glandular System . . . . .		1,220	—	—	—	133'10			
9. Urinary System . . . . .		176	10	1	11	16'81			
10. Generative " . . . . .		2,383	2	—	2	154'31			
11. Organs of Locomotion . . . . .		595	—	—	—	47'51			
12. Connective Tissue . . . . .		1,760	1	1	2	79'88			
13. Skin . . . . .		4,771	—	—	—	184'29			
III.—POISONS . . . . .		15	4	—	4	'46			
IV.—INJURIES.									
1. General . . . . .		22	24	1	25	1'71			
2. Local . . . . .		6,831	23	1	24	288'74			
3. In Action . . . . .		—	—	—	—	—			
No appreciable disease . . . . .		275	—	—	—	10'32			
Cause unknown (refers to deaths only) . . . . .		—	—	1	1	—			
General Total . . . . .		57,154	374	24	308	3389'55			

\* The average ratios for 10 years will be given in future years. The average ratios for years 1886 to 1894 in

† Ratios of deaths and invalids calculated on this strength.

into HOSPITAL, DEATHS, NUMBERS INVALIDED and CONSTANTLY SICK  
Year 1893, with the Ratios per 1,000 of the Strength.

[illegible]

the eight years 1886 to 1893 will be given in the Report for 1894; those for the nine that for 1895, &c., &c.

ABSTRACT B.—TABLE showing the AVERAGE STRENGTH, ADMISSIONS among the TROOPS stationed in SCOTLAND during the

Average Strength, in Annual Returns, 3,421. † Average Strength, including Men detached, 3,432.				Admissions into Hospital.	Died		Dis- Invalids charged the Ser- vice.	Average Number constantly Sick.
Diseases.					With the Regiment.	Absent from Regiment.		
						Total.		
I.—GENERAL DISEASES.								
GROUP "A."								
Sub-Group I.	Small-pox	-	-	1	—	—	—	·12
	Other Eruptive Fevers	-	-	12	—	—	—	1·07
	Enteric Fever	-	-	3	—	—	—	·43
	Other Continued Fevers	-	-	15	—	—	—	·35
	Yellow Fever	-	-	—	—	—	—	—
	Cholera	-	-	1	—	—	—	·12
	Dysentery	-	-	49	1	—	1	1·09
Other Diseases				-	-	-	-	-
Total -				81	1	—	1	3·18
Sub-Group II.—Malarial Fevers				15	—	—	—	·33
Sub-Group III.—Septic Diseases				6	1	—	1	·21
Sub-Group IV.	Syphilis, Primary	-	-	88	—	—	—	7·16
	" Secondary	-	-	63	—	—	3	4·40
	Gonorrhoea	-	-	296	—	—	—	16·45
Total -				447	—	—	3	28·01
Sub-Group V.—Hydrophobia, &c.				—	—	—	—	—
GROUP "B."								
Sub-Group I.—Parasitic Diseases				—	—	—	—	—
Sub-Group II.	Scurvy	-	-	—	—	—	—	—
	Alcoholism	-	-	4	—	—	—	·09
GROUP "C."								
Debility, &c.				22	—	—	4	·91
GROUP "D."								
Rheumatism				68	1	—	1	3·89
Tubercular Diseases				8	4	—	4	·49
Other Diseases				9	—	—	3	·78
II.—LOCAL DISEASES.								
Diseases of the—								
1.	Nervous System	{ Nervous Diseases	-	28	2	—	2	1·68
		{ Mental	-	7	—	—	5	1·04
2.	Eye	-	-	30	—	—	1	1·11
3 & 4.	Other Organs of Special Senses	-	-	13	—	—	1	·56
5.	Circulatory System	-	-	23	—	—	9	1·45
6.	Respiratory	-	-	178	4	1	5	7·52
7.	Digestive	-	-	360	2	—	6	8·74
8.	Lymphatic and Glandular System	-	-	26	—	—	1	1·77
9.	Urinary System	-	-	7	1	—	1	·64
10.	Generative	-	-	113	—	—	2	4·93
11.	Organs of Locomotion	-	-	26	—	—	2	1·11
12.	Connective Tissue	-	-	99	—	—	—	3·05
13.	Skin	-	-	298	—	—	1	9·82
III.—POISONS				1	1	—	1	·14
IV.—INJURIES.								
1.	General	-	-	—	2	—	—	—
2.	Local	-	-	275	1	—	1	10·57
3.	In Action	-	-	—	—	—	—	—
No appreciable disease				6	—	—	—	·08
Cause unknown (refers to deaths only)				—	—	—	—	—
General Total				2,150	20	1	21	92·10

\* The average ratios for 10 years will be given in future years. The average ratios years 1886 to 1894 in

† Ratios of deaths and invalids calculated on this strength.

into HOSPITAL, DEATHS, NUMBERS INVALIDED and CONSTANTLY SICK, Year 1893, with the Ratios per 1,000 of the Strength.

Ratio per 1,000.				*Average Ratio per 1,000 from 1886 to 1892.			
Admissions.	Deaths.	Invalids Discharged the Service.	Constantly Sick.	Admissions.	Deaths.	Invalids Discharged the Service.	Constantly Sick.
—	—	—	—	—	—	—	—
3	—	—	04	—	—	—	—
35	—	—	31	48	—	—	27
9	—	—	13	8	15	—	13
44	—	—	10	75	—	—	17
—	—	—	—	—	—	—	—
3	—	—	03	2	—	04	01
143	20	—	22	95	08	—	22
237	20	—	03	228	23	04	79
44	—	—	10	26	—	—	06
18	20	—	08	31	08	—	15
257	—	—	209	318	—	—	254
184	—	87	120	326	04	103	232
985	—	—	481	716	—	12	351
1304	—	87	819	1300	04	115	837
—	—	—	—	—	—	—	—
—	—	—	—	7	—	—	02
—	—	—	—	3	—	04	02
12	—	—	03	36	—	—	08
64	—	117	27	50	—	123	35
199	20	146	114	278	04	126	159
23	117	146	14	32	77	134	43
26	—	87	23	36	23	19	16
—	—	—	—	—	—	—	—
82	58	87	40	64	23	100	39
21	—	146	30	20	—	80	26
88	—	20	32	99	—	88	50
38	—	20	16	58	04	80	26
67	—	262	42	99	50	422	80
520	146	146	220	507	168	288	280
1052	58	175	255	929	142	142	228
76	—	20	52	94	04	04	65
21	20	52	19	25	19	23	17
330	—	52	144	389	04	31	206
76	—	52	33	80	—	92	47
289	—	—	89	270	04	15	90
871	—	20	287	784	—	15	256
3	20	—	04	1	11	04	—
—	—	—	—	—	—	—	—
—	58	—	—	5	46	11	04
804	20	117	209	1041	46	84	260
18	—	—	02	28	—	—	06
—	—	—	—	—	—	—	—
6385	611	1806	2692	6670	552	1919	2981

for the eight years 1886 to 1893 will be given in the Report for 1894; those for the nine that for 1896, &c., &c.

ABSTRACT C.—TABLE showing the AVERAGE STRENGTH, ADMISSIONS among the TROOPS stationed in IRELAND during the

Average Strength in Annual Returns, 24,412 † Average Strength, including Men detached, 25,435.		Admissions into Hospital.	Died			Dis- charged the Ser- vice.	Average Number constantly Sick.
Diseases.			With the Regiment.	Absent from Regiment.	Total.		
I.—GENERAL DISEASES.							
GROUP "A."							
Sub-Group I.	Small-pox	2	—	—	—	—	19
	Other Eruptive Fevers	160	2	—	2	—	13'64
	Enteric Fever	45	6	—	6	—	8'72
	Other Continued Fevers	105	—	—	—	—	3'11
	Yellow Fever	—	—	—	—	—	—
	Cholera	—	—	—	—	—	—
	Dysentery	5	—	—	—	—	22
	Other Diseases	202	—	—	—	—	6'54
Total		519	8	—	8	—	32'42
Sub-Group II.—Malarial Fevers		78	—	—	—	—	2'81
Sub-Group III.—Septic Diseases		67	—	—	—	1	5'32
Sub-Group IV.	Syphilis, Primary	875	—	—	—	—	89'97
	" Secondary	587	2	—	2	12	56'99
	Gonorrhoea	1,765	—	—	—	—	129'87
Total		3,227	2	—	2	12	276'83
Sub-Group V.—Hydrophobia, &c.		—	—	—	—	—	—
GROUP "B."							
Sub-Group I.—Parasitic Diseases		7	—	—	—	—	64
Sub-Group II.	Scurvy	—	—	—	—	—	—
	Alcoholism	25	—	—	—	—	63
GROUP "C."							
Debility, &c.		139	—	—	—	19	10'14
GROUP "D."							
Rheumatism		771	—	1	1	11	52'93
Tubercular Diseases		77	20	2	22	38	12'68
Other Diseases		112	4	1	5	8	8'46
II.—LOCAL DISEASES.							
Diseases of the—							
1. Nervous System { Nervous Diseases		141	3	1	4	27	9'17
2. Eye { Mental "		40	—	—	—	39	7'29
3. Eye		270	—	—	—	25	20'21
3 & 4. Other Organs of Special Senses		152	—	—	—	17	10'28
5. Circulatory System		205	2	1	3	78	21'88
6. Respiratory "		1,624	20	2	22	15	32'69
7. Digestive "		2,569	7	1	8	22	53'96
8. Lymphatic and Glandular System		294	—	—	—	2	29'62
9. Urinary System		57	4	—	4	11	5'48
10. Generative "		717	—	—	—	6	47'75
11. Organs of Locomotion		229	—	—	—	10	17'61
12. Connective Tissue		602	—	—	—	2	38'51
13. Skin		1,533	—	—	—	5	62'66
III.—POISONS		3	2	—	2	—	31
IV.—INJURIES.							
1. General		4	15	1	16	—	17
2. Local		2,392	7	1	8	11	101'11
3. In Action		—	—	—	—	—	—
No appreciable disease		76	—	—	—	—	2'29
Cause unknown (refers to deaths only)		—	—	—	—	—	—
General Total		15,930	94	11	105	359	932'84

\* The average ratios for 10 years will be given in future years. The average ratios for 1896 to 1899 in

† Ratios of deaths and invalids calculated on this strength.

into HOSPITAL, DEATHS, NUMBERS INVALIDED and CONSTANTLY SICK  
Year 1893, with the Ratios per 1,000 of the Strength.

Ratio per 1,000.				*Average Ratio per 1,000 from 1886 to 1892.			
Admis- sions.	Deaths.	Invalids Dis- charged the Service.	Constantly Sick.	Admis- sions.	Deaths.	Invalids Dis- charged the Service.	Constantly Sick.
.1	—	—	—	—	—	—	—
6.6	.08	—	.56	3.9	.03	—	.21
1.8	.23	—	.36	2.5	.54	—	.40
4.3	—	—	.13	7.9	.02	—	.28
—	—	—	—	—	—	—	—
.2	—	—	.01	.3	.02	.04	.03
8.3	—	—	.27	13.2	.02	—	.32
21.3	.31	—	1.33	27.8	.63	.04	1.24
3.2	—	—	.11	2.8	.01	.01	.09
2.7	—	.04	.22	1.6	.03	.01	.10
35.8	—	—	3.69	60.0	—	—	5.40
24.1	.68	.47	2.33	30.6	.05	.65	2.71
72.3	—	—	5.32	91.5	—	.04	5.96
132.2	.08	.47	11.34	182.1	.06	.69	14.07
—	—	—	—	—	—	—	—
.3	—	—	.03	.4	—	—	.01
—	—	—	—	.2	.01	—	.01
1.0	—	—	.02	2.4	.02	—	.07
5.7	—	.75	.42	7.6	.02	1.00	.53
31.6	.04	.43	2.17	32.7	.02	.53	1.99
3.1	.87	1.50	.52	3.3	.84	1.50	.53
4.6	.20	.31	.35	5.1	.09	.29	.38
5.8	.16	1.06	.37	6.9	.31	1.03	.46
1.6	—	1.53	.30	1.7	.02	1.06	.30
11.1	—	.98	.83	12.3	—	.52	.73
6.2	—	.67	.42	6.7	.01	.60	.38
8.4	.12	3.07	.90	8.4	.37	2.31	.74
66.5	.87	.59	3.39	61.4	1.19	.63	3.10
105.2	.31	.87	3.40	92.3	.27	.74	2.71
12.0	—	.08	1.21	16.5	—	.69	1.63
2.3	.16	.43	.22	2.1	.14	.23	.13
29.4	—	.23	1.96	36.9	.02	.21	2.07
9.4	—	.39	.72	7.8	.03	.73	.60
24.7	—	.06	1.17	23.0	—	.06	1.01
62.8	—	.20	2.57	73.3	—	.21	2.79
.1	.08	—	—	.1	.02	.01	—
.2	.62	—	.01	.1	.42	.01	.01
98.0	.31	.43	4.14	101.5	.53	.63	4.00
3.1	—	—	.09	2.3	—	.01	.07
—	—	—	—	—	—	—	—
652.5	4.13	14.11	38.21	719.3	4.85	13.40	39.53

the eight years 1886 to 1893 will be given in the Report for 1894; those for the nine years  
that for 1895, &c., &c.

ABSTRACT D.—TABLE showing the AVERAGE STRENGTH, SICKNESS, UNITED KINGDOM in 1893, with

Average Strength.		Officers, 4,026.			
Diseases.		Attacks of Illness.	Deaths.	Ratio per 1,000.	
				Attacks.	Deaths.
I.—GENERAL DISEASES.					
GROUP "A."					
Sub-Group I.	Small-pox . . . . .	1	—	·2	—
	Other Eruptive Fevers . . . . .	33	—	8·2	—
	Enteric Fever . . . . .	8	1	2·0	·25
	Other Continued Fevers . . . . .	50	—	12·4	—
	Yellow Fever . . . . .	—	—	—	—
	Cholera . . . . .	1	—	·2	—
	Dysentery . . . . .	6	—	1·5	—
	Other Diseases . . . . .	212	1	52·7	·25
	Total . . . . .	311	2	77·2	·50
Sub-Group II.—Malarial Fevers . . . . .		51	—	12·7	—
Sub-Group III.—Septic Diseases . . . . .		3	—	·7	—
Sub-Group IV.	{ Syphilis, Primary . . . . .	3	—	·7	—
	{       "   Secondary . . . . .	3	—	·7	—
	{ Gonorrhoea . . . . .	25	—	6·2	—
	Total . . . . .	31	—	7·7	—
Sub-Group V.—Hydrophobia, &c. . . . .		—	—	—	—
GROUP "B."					
Sub-Group I.—Parasitic Diseases . . . . .		—	—	—	—
Sub-Group II.	{ Scurvy . . . . .	—	—	—	—
	{ Alcoholism . . . . .	—	—	—	—
GROUP "C."					
Debility, &c. . . . .		17	—	4·2	—
GROUP "D."					
Rheumatism . . . . .		75	—	18·6	—
Tubercular Diseases . . . . .		—	—	—	—
Other Diseases . . . . .		3	1	·7	·25
II.—LOCAL DISEASES.					
Diseases of the—					
1. Nervous System { Nervous Diseases . . . . .		25	—	6·2	—
{ Mental       "       " . . . . .		2	—	·5	—
2. Eye . . . . .		15	—	3·7	—
3 & 4. Other Organs of Special Senses . . . . .		8	—	2·0	—
5. Circulatory System . . . . .		12	4	3·0	·99
6. Respiratory       " . . . . .		196	2	48·7	·50
7. Digestive       " . . . . .		258	—	64·1	—
8. Lymphatic and Glandular System . . . . .		12	—	3·0	—
9. Urinary System . . . . .		15	1	3·7	·25
10. Generative       " . . . . .		25	—	6·2	—
11. Organs of Locomotion . . . . .		26	—	6·5	—
12. Connective Tissue . . . . .		47	—	11·7	—
13. Skin . . . . .		40	1	9·9	·25
III.—POISONS . . . . .		1	—	·2	—
IV.—INJURIES.					
1. General . . . . .		3	—	·7	—
2. Local . . . . .		236	4	58·4	·99
3. In Action . . . . .		—	—	—	—
No appreciable disease . . . . .		—	—	—	—
Cause unknown (refers to deaths only) . . . . .		—	1	—	·25
General Total . . . . .		1,411	16	350·4	3·97

and MORTALITY among the OFFICERS, WOMEN, and CHILDREN in the the Ratios per 1,000 of the Strength.

Women, 10,379.				Children, 20,634.			
Attacks of Illness.	Deaths.	Ratio per 1,000.		Attacks of Illness.	Deaths.	Ratio per 1,000.	
		Attacks.	Deaths.			Attacks.	Deaths.
—	—	—	—	—	—	—	—
50	1	4·8	·10	2,642	62	128·1	3·00
3	—	·3	—	19	1	·9	·05
30	—	2·9	—	109	—	5·2	—
—	—	—	—	—	—	—	—
8	—	·8	—	1	1	—	·05
312	1	30·0	·10	12	2	·6	·10
—	—	—	—	819	28	39·7	1·35
403	2	38·8	·19	3,662	94	177·5	4·53
64	2	6·2	·19	53	—	2·6	—
28	6	2·7	·58	13	1	·6	·06
—	—	—	—	—	—	—	—
5	—	·5	—	22	3	1·1	·14
—	—	—	—	—	—	—	—
5	—	·5	—	22	3	1·1	·14
—	—	—	—	—	—	—	—
7	—	·7	—	69	1	3·4	·05
—	—	—	—	—	—	—	—
5	1	·5	·10	2	2	·1	·10
—	—	—	—	—	—	—	—
606	—	58·4	—	578	46	28·0	2·23
—	—	—	—	—	—	—	—
202	1	19·5	·10	64	3	3·1	·14
53	10	5·1	·93	33	20	1·6	·97
136	2	13·1	·19	159	9	7·7	·44
—	—	—	—	—	—	—	—
210	4	20·2	·38	227	71	11·0	3·44
9	1	·9	·10	—	—	—	—
46	—	4·6	—	196	—	9·6	—
19	—	1·8	—	94	—	4·6	—
95	4	9·1	·38	9	2	·4	·10
689	3	66·4	·77	3,364	134	161·0	6·49
1,045	7	100·7	·67	2,466	73	119·5	3·54
23	—	2·2	—	104	1	5·0	·05
26	—	2·5	—	18	1	·9	·05
492	3	47·4	·29	18	—	·9	—
25	—	2·4	—	42	—	2·0	—
91	—	8·8	—	177	1	8·6	·05
127	—	12·2	—	683	—	33·1	—
2	—	·2	—	1	—	—	—
—	—	—	—	—	—	—	—
70	—	6·7	—	9	6	·4	·29
—	—	—	—	452	—	21·9	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
4,480	51	431·6	4·90	12,517	468	606·6	22·68



ABSTRACT No. II.—TABLE showing the AVERAGE STRENGTH, ADMISSIONS the TROOPS stationed at GIBRALTAR during the Year 1893, with the Ratios

Average Strength, 4,743.		Admissions into Hospital.	Deaths.		Invalids.		Average Number constantly Sick.	
DISEASES.			In the Com- mand.	Of Invalids.	Total.	Number sent Home.		Number finally Dis- charged the Service.
I.—GENERAL DISEASES.								
GROUP "A."								
Sub-Group I.	Small-pox	—	—	—	—	—	—	—
	Other Eruptive Fevers	5	—	—	—	—	—	·60
	Enteric Fever	17	3	—	3	1	—	2·35
	Other Continued Fevers	132	—	—	—	2	1	13·40
	Yellow Fever	—	—	—	—	—	—	—
	Cholera	3	—	—	—	—	—	·25
	Dysentery	19	—	—	—	—	—	·65
Total		176	3	—	3	3	1	17·25
Sub-Group II.—Malarial Fevers		3	—	—	—	—	—	·90
Sub-Group III.—Septic Diseases		4	—	—	—	—	—	·22
Sub-Group IV.	Syphilis, Primary	96	—	—	—	—	1	11·96
	Secondary	109	2	—	2	1	—	11·45
	Gonorrhoea	768	—	—	—	1	—	63·50
Total		973	2	—	2	2	1	86·91
Sub-Group V.—Hydrophobia, &c.		—	—	—	—	—	—	—
GROUP "B."								
Sub-Group I.—Parasitic Diseases		7	—	—	—	—	—	·44
Sub-Group II.	Scurvy	—	—	—	—	—	—	—
	Alcoholism	18	—	—	—	1	—	·99
GROUP "C."								
Debility, &c.		10	—	—	—	4	—	·50
GROUP "D."								
Rheumatism		138	—	—	—	2	—	8·68
Tubercular Diseases		5	1	1	2	6	5	1·75
Other Diseases		34	—	—	—	4	3	3·47
II.—LOCAL DISEASES.								
Diseases of the—								
1. Nervous System { Nervous Diseases		58	—	—	—	3	3	3·15
{ Mental " "		1	—	—	—	4	5	1·13
2. Eye		50	—	—	—	4	3	3·76
3 & 4. Other Organs of Special Senses		60	—	—	—	9	5	4·46
5. Circulatory System		52	2	1	3	7	4	3·04
6. Respiratory " "		166	—	—	—	5	1	10·74
7. Digestive " "		454	1	—	1	6	3	12·44
8. Lymphatic and Glandular System		77	—	—	—	—	—	8·68
9. Urinary System		18	—	—	—	2	1	1·48
10. Generative " "		570	—	—	—	1	—	50·40
11. Organs of Locomotion		27	—	—	—	5	3	2·03
12. Connective Tissue		103	—	—	—	—	—	4·77
13. Skin		304	—	—	—	—	—	12·52
III.—POISONS								
IV.—INJURIES.								
1. General		1	—	—	—	—	—	·16
2. Local		472	2	—	2	2	2	20·25
3. In Action		—	—	—	—	—	—	—
No appreciable disease		29	—	—	—	—	—	·53
Cause unknown (refers to deaths only)		—	—	—	—	—	—	—
General Total		3,780	11	2	13	70	40	259·87
* Average of 10 years, 1883-92		—	—	—	—	—	—	—

† The average ratios for 10 years will be given in future years. The average ratios for 1886 to 1894 in

into HOSPITAL, DEATHS, NUMBERS INVALIDED and CONSTANTLY SICK among per 1,000 of the Strength, and the Average Ratios for 10 Years.\*

Ratio per 1,000.					Average Ratio per 1,000 from 1886 to 1892.†				
Admis- sions.	Deaths.	Invalids sent Home.	Invalids finally Dis- charged.	Con- stantly Sick.	Admis- sions.	Deaths.	Invalids sent Home.	Invalids finally Dis- charged.	Con- stantly Sick.
—	—	—	—	—	—	—	—	—	—
1·1	—	—	—	·13	·6	—	—	—	·04
3·6	·63	·21	—	·50	11·3	1·84	3·94	—	2·01
27·8	—	·42	·21	2·82	26·6	·06	3·61	·03	3·25
—	—	—	—	—	—	—	—	—	—
·6	—	—	—	·05	·4	·03	—	—	·02
4·0	—	—	—	·14	23·3	·03	—	—	·40
37·1	·63	·63	·21	3·64	62·2	1·96	7·55	·03	5·72
·6	—	—	—	·04	1·4	·03	·06	·06	·05
·9	—	—	—	·06	·6	·06	—	—	·03
20·2	—	—	·21	2·52	34·4	—	—	—	3·29
23·0	·43	·21	—	2·41	28·3	·09	·83	·25	2·47
161·9	—	·21	—	13·39	110·0	—	—	—	6·93
206·1	·42	·42	·21	18·32	172·7	·00	·83	·25	12·69
—	—	—	—	—	—	—	—	—	—
1·5	—	—	—	·00	·6	—	—	—	·01
3·8	—	·21	—	·21	5·4	·03	—	—	·15
2·1	—	·84	—	·11	4·7	·03	1·41	1·16	·36
29·1	—	·42	—	1·83	30·9	—	1·35	·34	1·90
1·1	·42	1·27	1·06	·37	2·0	·37	1·56	1·04	·35
7·2	—	·84	·63	·73	3·3	·18	·37	·22	·27
12·2	—	·63	·63	·66	4·9	·24	·67	·70	·32
·2	—	·84	1·06	·24	·7	—	·61	·55	·15
10·5	—	·84	·63	·79	11·4	—	·61	·61	·84
12·7	—	1·90	1·03	·94	7·1	—	·46	·37	·44
6·7	·63	1·48	·84	·64	2·1	·31	·64	·73	·20
32·9	—	1·06	·21	2·26	20·4	·52	·93	·46	1·42
95·7	·21	1·27	·63	2·62	77·2	·31	·28	·12	2·10
16·2	—	—	—	1·83	9·7	—	·12	·12	1·08
3·8	—	·42	·21	·30	1·1	·18	·21	·12	·11
120·2	—	·21	—	10·63	89·2	·03	—	·03	5·93
5·7	—	1·06	·63	·43	4·9	·03	·49	·34	·43
21·7	—	—	—	1·01	17·5	—	·09	·06	·86
64·1	—	—	—	2·64	41·3	—	·03	·06	1·53
—	—	—	—	—	·1	·03	—	—	—
·2	—	—	—	·03	·2	·24	·03	·03	·03
99·5	·42	·42	·42	4·27	99·8	·43	·40	·34	4·15
6·1	—	—	—	·11	2·3	—	—	—	·06
—	—	—	—	—	—	—	—	—	—
796·9	2·74	14·76	8·43	54·79	679·7	5·07	18·60	7·74	41·96
763·8	5·31	22·49	8·60	46·32	—	—	—	—	—

the eight years 1886 to 1893 will be given in the Report for 1894; those for the nine years that for 1895, &c., &c.

**ABSTRACT No. III.—TABLE showing the AVERAGE STRENGTH, ADMISSIONS the TROOPS stationed at MALTA during the Year 1893, with the Ratios**

Average Strength, 7,161.		Admissions into Hospital.	Deaths.			Invalids.		Average Number constantly Sick.
Diseases.			In the Com- mand.	Of Invalids.	Total.	Number sent Home.	Number finally Dis- charged the Service.	
I.—GENERAL DISEASES.								
GROUP "A."								
Sub-Group I.	{ Small-pox - - - - -	-	-	-	-	-	-	-
	{ Other Eruptive Fevers - - -	1	-	-	-	-	-	09
	{ Enteric Fever - - - - -	101	32	-	32	9	-	19'01
	{ Other Continued Fevers - - -	938	5	-	5	66	9	70'21
	{ Yellow Fever - - - - -	-	-	-	-	-	-	-
	{ Cholera - - - - -	-	-	-	-	-	-	-
	{ Dysentery - - - - -	29	2	-	2	-	-	2'04
	{ Other Diseases - - - - -	7	-	-	-	-	-	27
	Total - - - - -	1,076	39	-	39	75	9	91'62
Sub-Group II.—Malarial Fevers - - -		294	-	-	-	13	3	12'50
Sub-Group III.—Septic Diseases - - -		11	2	-	2	-	-	72
Sub-Group IV.	{ Syphilis, Primary - - - - -	117	-	-	-	-	-	14'97
	{ " Secondary - - - - -	95	-	-	-	1	3	12'14
	{ Gonorrhoea - - - - -	664	-	-	-	2	-	48'54
	Total - - - - -	876	-	-	-	3	3	75'65
Sub-Group V.—Hydrophobia, &c. - - -		-	-	-	-	-	-	-
GROUP "B."								
Sub-Group I.—Parasitic Diseases - - -		9	-	-	-	-	-	21
Sub-Group II.	{ Scurvy - - - - -	-	-	-	-	-	-	-
	{ Alcoholism - - - - -	24	-	-	-	-	-	90
GROUP "C."								
Debility, &c. - - - - -		64	-	-	-	3	17	6'18
GROUP "D."								
Rheumatism - - - - -		178	1	-	1	12	-	13'90
Tubercular Diseases - - - - -		21	4	8	12	14	11	3'16
Other Diseases - - - - -		24	-	2	2	3	2	1'85
II.—LOCAL DISEASES.								
Diseases of the—								
1. Nervous System { Nervous Diseases -		46	2	-	2	6	3	2'35
		{ Mental " - - - - -	9	-	-	14	13	2'14
2. Eye - - - - -		70	-	-	-	8	4	5'61
3 & 4. Other Organs of Special Senses -		84	-	-	-	3	4	4'31
5. Circulatory System - - - - -		40	2	-	2	14	6	4'31
6. Respiratory " - - - - -		162	1	3	4	17	3	11'80
7. Digestive " - - - - -		591	2	-	2	6	8	18'81
8. Lymphatic and Glandular System -		54	-	-	-	1	2	7'28
9. Urinary System - - - - -		19	-	-	-	7	4	2'19
10. Generative " - - - - -		365	-	-	-	-	1	23'39
11. Organs of Locomotion - - - - -		41	-	1	1	2	5	2'80
12. Connective Tissue - - - - -		262	-	-	-	-	-	11'09
13. Skin - - - - -		371	-	-	-	2	2	17'25
III.—POISONS - - - - -		5	-	-	-	-	-	12
IV.—INJURIES.								
1. General - - - - -		5	7	-	7	-	-	44
2. Local - - - - -		716	1	-	1	2	3	28'43
3. In Action - - - - -		-	-	-	-	-	-	-
No appreciable disease - - - - -		16	-	-	-	-	-	90
Cause unknown (refers to deaths only) -		-	-	-	-	-	-	-
General Total - - - - -		5,433	61	14	75	195	103	349'91
*Average of 10 years, 1883-92 - - -		-	-	-	-	-	-	-

† The average ratios for 10 years will be given in future years. The average ratios 1886 to 1894 in

into HOSPITAL, DEATHS, NUMBERS INVALIDED and CONSTANTLY SICK among per 1,000 of the Strength, and the Average Ratios for 10 Years.\*

Ratio per 1,000.					Average Ratio per 1,000 from 1886 to 1892.†				
Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.	Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
—	—	—	—	—	—	—	—	—	—
141	—	—	—	01	4	—	—	—	02
141	447	125	—	266	58	210	74	02	102
1310	70	928	125	980	1118	118	385	15	908
—	—	—	—	—	—	—	—	—	—
41	28	—	—	28	46	08	—	—	—
10	—	—	—	04	50	23	18	07	38
—	—	—	—	—	—	07	02	—	14
1503	545	1047	125	1279	1276	359	479	22	1004
411	—	182	42	175	19	20	09	—	14
15	28	—	—	10	6	02	—	—	04
163	—	—	—	209	169	—	—	—	175
133	—	14	42	160	146	02	48	26	142
927	—	28	—	678	601	—	06	—	422
1223	—	42	42	1056	916	02	54	26	739
—	—	—	—	—	—	—	—	—	—
13	—	—	—	03	13	—	—	02	03
34	—	—	—	12	27	02	02	—	09
89	—	42	237	86	114	—	118	85	106
249	14	167	—	194	270	09	87	55	198
29	167	195	153	44	25	76	155	143	39
34	28	42	28	26	35	07	11	20	22
64	28	84	42	33	67	20	83	99	45
13	—	195	181	30	20	07	160	168	38
98	—	112	56	78	104	—	44	37	61
117	—	42	56	60	107	—	90	85	68
56	28	195	84	60	78	24	166	167	69
236	56	98	42	165	230	55	147	63	173
825	28	84	112	263	831	61	66	23	289
75	—	14	28	102	63	—	13	04	58
26	—	08	56	31	21	02	66	44	21
510	—	—	14	327	412	02	48	41	295
57	14	28	70	40	60	02	42	37	48
366	—	—	—	155	253	02	09	02	99
518	—	28	28	241	389	—	20	05	191
7	—	—	—	02	1	07	—	—	01
7	98	—	—	06	5	52	02	—	04
1000	14	28	42	397	859	26	70	48	393
22	—	—	—	11	21	—	—	—	10
—	—	—	—	—	—	—	—	—	—
7587	1047	2723	1438	4886	6212	737	1941	1175	4061
6787	819	2099	1194	4413	—	—	—	—	—

for the eight years 1886 to 1893 will be given in the Report for 1894; those for the nine years that for 1885, &c., &c.

**ABSTRACT No. IIIA.—TABLE showing the AVERAGE STRENGTH, ADMISSIONS the ROYAL MALTA ARTILLERY stationed at MALTA during the Year 1893,**

Average Strength, 372.				Admissions into Hospital.	Deaths.			Invalids.		Average Number constantly Sick.
Diseases.					In the Com- mand.	Of Invalids.	Total.	Number sent Home.	Number Dis- charged the Service.	
I.—GENERAL DISEASES.										
GROUP "A."										
Sub-Group I.	Small-pox	-	-	-	-	-	-	-	-	-
	Other Eruptive Fevers	-	-	3	-	-	-	-	-	*07
	Enteric Fever	-	-	-	-	-	-	-	-	-
	Other Continued Fevers	-	-	21	-	-	-	-	-	*52
	Yellow Fever	-	-	-	-	-	-	-	-	-
	Cholera	-	-	-	-	-	-	-	-	-
	Dysentery	-	-	-	-	-	-	-	-	-
	Other Diseases	-	-	2	-	-	-	-	-	*06
	Total	-	-	26	-	-	-	-	-	*65
Sub-Group II.—Malarial Fevers - - - - -										
Sub-Group III.—Septic Diseases - - - - -										
Sub-Group IV.	Syphilis, Primary	-	-	7	-	-	-	-	-	*56
	" Secondary	-	-	2	-	-	-	-	-	*07
	Gonorrhoea	-	-	13	-	-	-	-	-	*82
	Total	-	-	22	-	-	-	-	-	1*45
Sub-Group V.—Hydrophobia, &c. - - - - -										
GROUP "B."										
Sub-Group I.—Parasitic Diseases - - - - -										
Sub-Group II.	Scurvy	-	-	-	-	-	-	-	-	-
	Alcoholism	-	-	-	-	-	-	-	-	-
GROUP "C."										
Debility, &c. - - - - -				2	-	-	-	-	2	*15
GROUP "D."										
Rheumatism - - - - -				9	-	-	-	-	-	*21
Tubercular Diseases - - - - -				3	-	-	-	-	1	*20
Other Diseases - - - - -				-	-	-	-	-	-	-
II.—LOCAL DISEASES.										
Diseases of the—										
1. Nervous System { Nervous Diseases				-	-	-	-	-	-	-
2. Eye - - - - - { Mental " "				1	-	-	-	-	1	*07
3 & 4. Other Organs of Special Senses				4	-	-	-	-	-	*06
5. Circulatory System - - - - -				2	-	-	-	-	1	*08
6. Respiratory " - - - - -				-	-	-	-	-	-	-
7. Digestive " - - - - -				22	1	-	1	-	-	*63
8. Lymphatic and Glandular System				19	-	-	-	-	1	*46
9. Urinary System - - - - -				-	-	-	-	-	-	-
10. Generative " - - - - -				3	-	-	-	-	-	*07
11. Organs of Locomotion - - - - -				-	-	-	-	-	-	-
12. Connective Tissue - - - - -				7	-	-	-	-	-	*24
13. Skin - - - - -				30	-	-	-	-	-	1*36
III.—POISONS.										
IV.—INJURIES.										
1. General - - - - -				-	-	-	-	-	-	-
2. Local - - - - -				46	-	-	-	-	-	1*46
3. In Action - - - - -				-	-	-	-	-	-	-
No appreciable disease				-	-	-	-	-	-	-
Cause unknown (refers to deaths only)				-	-	-	-	-	-	-
General Total - - - - -				196	1	-	1	-	6	7*09
* Average of 10 years, 1883-92				-	-	-	-	-	-	-

† The average ratios for 10 years will be given in future years. The average ratios 1886 to 1894 in

into HOSPITAL, DEATHS, NUMBERS INVALIDED and CONSTANTLY SICK among with the Ratios per 1,000 of the Strength and the average Ratios for 10 Years.\*

Ratio per 1,000.					Average Ratio per 1,000 from 1886 to 1892.†				
Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.	Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
—	—	—	—	—	—	—	—	—	—
8·1	—	—	—	·19	·8	—	—	—	·03
56·4	—	—	—	1·40	60·8	·39	—	—	2·30
—	—	—	—	—	·4	·39	—	—	—
5·4	—	—	—	·16	11·4	—	—	—	·26
69·9	—	—	—	1·75	73·8	·78	—	—	2·59
—	—	—	—	—	1·6	—	—	—	·03
—	—	—	—	—	1·2	—	—	—	·05
18·8	—	—	—	1·51	11·0	—	—	—	·84
5·4	—	—	—	·19	8·2	—	—	·39	·78
34·9	—	—	—	2·20	32·2	—	—	·39	2·77
59·1	—	—	—	3·90	51·4	—	—	·78	4·39
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	·8	—	—	—	·01
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
5·4	—	—	5·38	·40	18·4	—	—	3·92	1·12
24·2	—	—	—	·56	25·1	—	—	·39	·83
8·1	—	—	2·69	·54	2·4	—	—	1·57	·42
—	—	—	—	—	5·5	—	—	·39	·29
—	—	—	—	—	5·1	—	—	·39	·15
2·7	—	—	2·69	·19	·4	—	—	·39	·11
10·7	—	—	—	·16	23·9	—	—	·78	1·21
5·4	—	—	2·69	·21	7·8	—	—	·39	·22
—	—	—	—	—	5·1	·39	—	1·57	·16
59·1	2·89	—	—	1·89	71·4	—	—	·78	3·27
51·1	—	—	2·69	1·24	86·7	—	—	·78	1·77
—	—	—	—	—	3·5	—	—	—	·13
—	—	—	—	—	2·4	—	—	·39	·15
8·1	—	—	—	·19	6·7	—	—	—	·21
—	—	—	—	—	6·3	—	—	2·35	·36
18·8	—	—	—	·65	12·9	—	—	—	·35
80·6	—	—	—	3·66	67·1	—	—	—	1·96
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
123·7	—	—	—	3·92	136·2	·78	—	·78	3·94
—	—	—	—	—	·4	—	—	—	·62
—	—	—	—	—	—	—	—	—	—
526·9	2·69	—	16·13	19·06	616·1	1·96	—	15·69	24·14
646·7	2·50	—	15·59	24·34	—	—	—	—	—

for the eight years 1886 to 1893 will be given in this Report for 1894; those for the nine years that for 1895, &c., &c.

ABSTRACT No. IV.—TABLE showing the AVERAGE STRENGTH, ADMISSIONS the Troops stationed at CYPRUS during the Year 1893, with the Ratios

Average Strength, 550.		Admissions into Hospital.	Deaths.			Invalids.		Average Number constantly Sick.
Diseases.			In the Com- mand.	Of Invalids.	Total.	Number sent Home.	Number finally Dis- charged the Service.	
I.—GENERAL DISEASES.								
GROUP "A."								
Sub-Group I.	Small-pox	—	—	—	—	—	—	—
	Other Eruptive Fevers	1	—	—	—	—	—	·03
	Enteric Fever	—	—	—	—	—	—	—
	Other Continued Fevers	32	—	—	—	2	1	1·98
	Yellow Fever	—	—	—	—	—	—	—
	Cholera	—	—	—	—	—	—	—
	Dysentery	—	—	—	—	—	—	—
Other Diseases		—	—	—	—	—	—	—
Total		33	—	—	—	2	1	2·01
Sub-Group II.—Malarial Fevers		6	—	—	—	—	—	·38
Sub-Group III.—Septic Diseases		—	—	—	—	—	—	—
Sub-Group IV.	Syphilis, Primary	13	—	—	—	—	—	1·37
	"      Secondary	9	—	—	—	1	—	1·03
	Gonorrhœa	69	—	—	—	—	—	6·21
Total		91	—	—	—	1	—	8·61
Sub-Group V.—Hydrophobia, &c.		—	—	—	—	—	—	—
GROUP "B."								
Sub-Group I.—Parasitic Diseases		—	—	—	—	—	—	—
Sub-Group II.	Scurvy	—	—	—	—	—	—	—
	Alcoholism	2	—	—	—	—	—	·18
GROUP "C."								
Debility, &c.		16	—	—	—	10	1	·95
GROUP "D."								
Rheumatism		20	—	—	—	2	1	1·01
Tubercular Diseases		2	—	—	—	2	3	·18
Other Diseases		2	—	—	—	—	—	·09
II.—LOCAL DISEASES.								
Diseases of the—								
1. Nervous System		1	—	—	—	1	—	·14
{ Nervous Diseases		2	—	—	—	2	—	·24
{ Mental           "		13	—	—	—	2	1	1·42
2. Eye		11	—	—	—	—	—	·65
3 & 4. Other Organs of Special Senses		6	—	—	—	4	8	·54
5. Circulatory System		2	1	—	1	—	—	·08
6. Respiratory       "		46	—	—	—	—	1	1·76
7. Digestive         "		21	—	—	—	—	—	1·76
8. Lymphatic and Glandular System		1	—	—	—	1	—	·40
9. Urinary System		22	—	—	—	—	—	1·15
10. Generative       "		2	—	—	—	—	—	·09
11. Organs of Locomotion		8	—	—	—	—	—	·62
12. Connective Tissue		10	—	—	—	—	—	·73
13. Skin		—	—	—	—	—	—	—
III.—POISONS.								
IV.—INJURIES.								
1. General		1	—	—	—	—	—	·03
2. Local		51	—	—	—	—	—	1·99
3. In Action		—	—	—	—	—	—	—
No appreciable disease		4	—	—	—	—	—	·24
Cause unknown (refers to deaths only)		—	—	—	—	—	—	—
General Total		373	1	—	1	27	16	25·25
* Average of 10 years, 1883-92		—	—	—	—	—	—	—

† The average ratios for 10 years will be given in future years. The average ratios 1886 to 1894 in

into HOSPITAL, DEATHS, NUMBERS INVALIDED and CONSTANTLY SICK among per 1,000 of the Strength and the average Ratios for 10 Years.\*

Ratio per 1,000.					Average Ratio per 1,000 from 1886 to 1892.†				
Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.	Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
—	—	—	—	—	—	—	—	—	—
1·8	—	—	—	·05	·5	—	—	—	·05
53·2	—	3·64	1·82	3·60	5·8	1·96	·93	—	1·02
—	—	—	—	—	71·4	—	—	—	2·60
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	12·8	·23	—	—	·72
—	—	—	—	—	8·4	—	—	—	·22
60·0	—	3·64	1·82	3·65	98·8	2·09	·93	—	4·60
10·9	—	—	—	·69	60·5	·23	·46	—	1·64
—	—	—	—	—	1·9	—	—	—	·08
23·6	—	—	—	2·49	81·9	—	—	—	7·15
18·4	—	1·82	—	1·87	41·6	—	1·63	·23	3·61
125·5	—	—	—	11·29	98·6	—	—	—	5·74
165·5	—	1·82	—	15·65	222·1	—	1·63	·23	16·50
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	1·2	—	—	—	·02
—	—	—	—	—	·7	—	—	—	·05
3·6	—	—	—	·33	2·6	·23	—	—	·15
29·1	—	18·18	1·82	1·73	20·0	—	4·88	·23	1·37
36·4	—	3·64	1·82	1·84	20·0	—	—	—	1·07
3·6	—	3·64	5·45	·33	·5	·23	·47	·47	·15
3·6	—	—	—	·16	2·1	—	—	·23	·15
1·8	—	1·82	—	·25	2·6	·23	1·16	·93	·18
3·6	—	3·64	1·82	·44	·7	—	·70	·47	·22
23·7	—	3·64	—	2·58	10·2	—	·47	·47	·50
20·0	—	—	—	1·18	8·2	·96	·23	·47	·18
10·9	—	7·27	14·54	·98	8·2	·70	1·86	·23	·27
3·6	1·82	—	—	·14	14·4	·23	·47	·47	·80
83·7	—	—	1·82	3·20	81·6	·70	·47	·47	3·03
38·2	—	—	—	3·20	27·2	—	—	·23	3·03
1·8	—	1·82	—	·73	2·1	—	·23	·23	·10
40·0	—	—	—	2·09	56·0	—	—	·23	3·97
3·6	—	—	—	·16	7·4	—	·93	·70	·62
14·6	—	—	—	1·13	25·8	—	·23	—	1·25
18·2	—	—	—	1·33	42·6	—	—	—	1·61
—	—	—	—	—	·5	·23	—	—	·03
1·8	—	—	—	·05	·2	—	—	—	·01
92·7	—	—	—	3·62	77·7	·23	·23	·23	3·19
—	—	—	—	—	—	—	—	—	—
7·3	—	—	—	·44	·5	—	—	—	·02
—	—	—	—	—	—	—	—	—	—
678·2	1·82	49·09	29·09	45·90	786·3	5·34	15·35	6·28	44·84
800·6	8·28	15·91	6·17	41·56	—	—	—	—	—

for the eight years 1886 to 1893 will be given in the Report for 1894; those for the nine years that for 1892, &c., &c.



ABSTRACT No. V.—TABLE showing the AVERAGE STRENGTH, ADMISSIONS the TROOPS stationed in CANADA during the Year 1893, with the

Average Strength, 1,421.		Admissions into Hospital.	Deaths.			Invalids.		Average Number constantly Sick.
Diseases			In the Com- mand.	Of Invalids.	Total.	Number sent Home.	Number finally Dis- charged the Service.	
I.—GENERAL DISEASES.								
GROUP "A."								
Sub-Group I.	Small-pox	—	—	—	—	—	—	—
	Other Eruptive Fevers	6	—	—	—	—	—	'47
	Enteric Fever	1	—	—	—	—	—	'02
	Other Continued Fevers	—	—	—	—	—	—	—
	Yellow Fever	—	—	—	—	—	—	—
	Cholera	—	—	—	—	—	—	—
	Dysentery	19	—	—	—	—	—	'66
	Other Diseases	—	—	—	—	—	—	—
	Total	26	—	—	—	—	—	1'15
	Sub-Group II.—Malarial Fevers	3	—	—	—	—	—	'21
	Sub-Group III.—Septic Diseases	—	—	—	—	—	—	—
Sub-Group IV.	Syphilis, Primary	39	—	—	—	—	—	2'80
	" Secondary	17	—	—	—	—	—	1'39
	Gonorrhœa	65	—	—	—	—	—	2'45
	Total	121	—	—	—	—	—	6'55
	Sub-Group V.—Hydrophobia, &c.	—	—	—	—	—	—	—
GROUP "B."								
	Sub-Group I.—Parasitic Diseases	2	—	—	—	—	—	'06
Sub-Group II.	Scurvy	—	—	—	—	—	—	—
	Alcoholism	9	—	—	—	—	—	'26
GROUP "C."								
	Debility, &c.	1	—	—	—	1	—	'03
GROUP "D."								
	Rheumatism	28	—	—	—	—	—	1'00
	Tubercular Diseases	5	—	1	1	4	3	'44
	Other Diseases	7	—	—	—	—	—	'31
II.—LOCAL DISEASES.								
Diseases of the—								
1. Nervous System	{ Nervous Diseases	18	—	1	1	4	3	'71
	{ Mental	1	—	—	—	1	1	'02
	2. Eye	11	—	—	—	1	—	'31
	3 & 4. Other Organs of Special Senses	8	—	—	—	—	—	'33
	5. Circulatory System	7	—	—	—	2	3	'68
	6. Respiratory	58	1	—	1	2	2	2'77
	7. Digestive	113	—	—	—	—	—	3'00
	8. Lymphatic and Glandular System	13	—	—	—	—	—	1'32
	9. Urinary System	1	—	—	—	—	1	'02
	10. Generative	40	—	—	—	—	—	2'04
	11. Organs of Locomotion	18	—	—	—	1	2	1'14
	12. Connective Tissue	35	—	—	—	—	—	1'25
	13. Skin	43	—	—	—	—	—	1'26
III.—POISONS								
IV.—INJURIES.								
1. General	—	—	—	—	—	—	—	—
2. Local	150	—	—	—	—	3	2	7'06
3. in Action	—	—	—	—	—	—	—	—
No appreciable disease	3	—	—	—	—	—	—	'20
Cause unknown (refers to deaths only)	—	—	—	—	—	—	—	—
	General Total	721	1	2	3	19	17	32'12
	*Average of 10 years 1883-92	—	—	—	—	—	—	—

† The average ratios for 10 years will be given in future years. The average ratios for 1880 to 1894 in

into HOSPITAL, DEATHS, NUMBERS INVALIDED and CONSTANTLY SICK among Ratios per 1,000 of the Strength, and the Average Ratios for 10 Years.\*

Ratio per 1,000.					Average Ratio per 1,000 from 1886 to 1892.†				
Admis- sions.	Deaths.	Invalids sent Home.	Invalids finally Dis- charged.	Con- stantly Sick.	Admis- sions.	Deaths.	Invalids sent Home.	Invalids finally Dis- charged.	Con- stantly Sick.
—	—	—	—	—	—	—	—	—	—
4'3	—	—	—	'33	1'4	—	—	—	'06
—	—	—	—	'01	1'9	'21	'10	—	'37
'7	—	—	—	—	3'2	—	—	—	'15
—	—	—	—	—	*1	—	—	—	'01
—	—	—	—	—	—	—	—	—	—
13'4	—	—	—	'47	6'7	—	—	—	'22
18'3	—	—	—	'81	13'3	'21	'10	—	'81
2'1	—	—	—	'15	1'3	—	—	—	'05
—	—	—	—	—	2'6	—	—	—	'14
27'5	—	—	—	1'97	26'6	—	—	—	1'88
13'0	—	—	—	'92	23'2	—	'73	'63	2'03
45'7	—	—	—	1'72	62'7	—	—	—	3'33
85'2	—	—	—	4'61	112'5	—	'73	'63	7'24
—	—	—	—	—	—	—	—	—	—
1'4	—	—	—	'04	'2	—	—	—	—
—	—	—	—	—	—	—	—	—	—
6'3	—	—	—	'18	2'2	—	—	—	'07
'7	—	'70	—	'02	2'9	—	1'16	'73	'21
19'7	—	—	—	'70	30'7	—	'63	'10	2'05
3'5	'70	2'83	2'11	'31	1'8	'73	1'05	1'26	'22
4'9	—	—	—	'22	3'5	—	'42	'73	'22
18'7	'70	2'82	2'11	'50	9'2	'53	2'42	1'89	'78
'7	—	'70	'70	'01	'5	'10	'42	'42	'12
7'7	—	—	—	'22	8'8	—	'53	'84	'39
5'6	—	—	—	'23	6'4	—	'63	'73	'51
4'9	—	1'41	2'11	'45	10'7	'53	2'42	2'63	1'01
40'8	'70	1'41	1'41	1'05	37'0	'63	1'26	1'37	2'30
79'5	—	—	—	2'11	70'8	'32	'32	'21	1'76
9'2	—	—	—	'03	14'3	—	—	—	1'42
'7	—	—	'70	'01	3'1	'21	'84	'32	'37
28'2	—	—	—	1'44	25'5	—	'32	'21	1'19
12'7	—	'70	1'41	'80	8'3	—	'95	'53	'75
24'6	—	—	—	'88	19'2	—	'21	—	'86
30'3	—	—	—	'89	35'4	—	'10	'32	1'36
—	—	—	—	—	'4	'21	—	—	—
—	—	—	—	—	'2	'53	—	—	'01
105'6	—	3'11	1'41	4'97	69'9	'42	'63	'53	3'00
—	—	—	—	—	—	—	—	—	—
2'1	—	—	—	'14	1'4	—	—	—	'06
—	—	—	—	—	—	—	—	—	—
507'4	2'11	13'37	11'96	22'60	402'1	4'42	15'14	13'45	29'90
572'0	4'91	20'45	15'68	31'73	—	—	—	—	—

the eight years 1886 to 1893 will be given in the Report for 1894; those for the nine years that for 1895, &c., &c.

**ABSTRACT No. VI.—TABLE showing the AVERAGE STRENGTH, ADMISSIONS the TROOPS stationed at BERMUDA during the Year 1893, with the Ratios**

Average Strength, 1,890.		Admissions into Hospital.	Deaths.			Invalids.		Average Number constantly Sick.
Diseases.			In the Com- mand.	Of Invalids.	Total.	Number sent Home.	Number finally Dis- charged the Service.	
I.—GENERAL DISEASES.								
GROUP "A."								
Sub-Group I.	{ Small-pox	—	—	—	—	—	—	—
	{ Other Eruptive Fevers	—	—	—	—	—	—	—
	{ Enteric Fever	43	9	—	9	—	—	6'58
	{ Other Continued Fevers	26	—	—	—	—	—	1'61
	{ Yellow Fever	—	—	—	—	—	—	—
	{ Cholera	—	—	—	—	—	—	—
	{ Dysentery	1	—	—	—	—	—	'04
{ Other Diseases		—	—	—	—	—	—	—
Total		70	9	—	9	—	—	8'23
Sub-Group II.—Malarial Fevers		—	—	—	—	—	—	—
Sub-Group III.—Septic Diseases		—	—	—	—	—	—	—
Sub-Group IV.	{ Syphilis, Primary	17	—	—	—	—	—	1'16
	{ " Secondary	10	—	—	—	2	1	'83
	{ Gonorrhœa	31	—	—	—	—	—	2'16
Total		58	—	—	—	2	1	4'15
Sub-Group V.—Hydrophobia, &c.		—	—	—	—	—	—	—
GROUP "B."								
Sub-Group I.—Parasitic Diseases		8	—	—	—	—	—	'18
Sub-Group II.	{ Scurvy	—	—	—	—	—	—	—
	{ Alcoholism	5	—	—	—	—	—	'11
GROUP "C."								
Debility, &c.		3	—	—	—	—	—	'16
GROUP "D."								
Rheumatism		24	—	—	—	1	—	'82
Tubercular Diseases		1	1	—	1	—	—	'29
Other Diseases		6	—	—	—	—	—	'57
II.—LOCAL DISEASES.								
Diseases of the—								
1. Nervous System { Nervous Diseases		5	—	—	—	—	—	'15
{ Mental "		2	—	—	—	1	2	'27
2. Eye		14	—	—	—	—	1	'70
3 & 4. Other Organs of Special Senses		15	—	—	—	1	2	'62
5. Circulatory System		19	1	—	1	1	1	2'16
6. Respiratory "		49	—	—	—	—	—	1'87
7. Digestive "		126	1	—	1	—	—	3'63
8. Lymphatic and Glandular System		6	—	—	—	—	—	1'36
9. Urinary System		2	—	—	—	—	—	'10
10. Generative "		16	—	—	—	—	—	'57
11. Organs of Locomotion		8	—	—	—	—	1	'94
12. Connective Tissue		25	—	—	—	—	—	1'23
13. Skin		45	—	—	—	—	—	1'71
III.—POISONS								
IV.—INJURIES.								
1. General		—	—	—	—	—	—	—
2. Local		142	—	—	—	—	—	5'84
3. In Action		—	—	—	—	—	—	—
No appreciable disease		2	—	—	—	—	—	'13
Cause unknown (refers to deaths only)		—	—	—	—	—	—	—
General Total		642	12	—	12	6	8	35'79
* Average of 10 years, 1883-92		—	—	—	—	—	—	—

† The average ratios for 10 years will be given in future years. The average ratios for 1886 to 1894 in

into HOSPITAL, DEATHS, NUMBERS INVALIDED and CONSTANTLY SICK among per 1,000 of the Strength, and the Average Ratios for 10 Years.\*

Ratio per 1,000.					Average Ratio per 1,000 from 1886 to 1892.†				
Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.	Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
—	—	—	—	—	—	—	—	—	—
20·9	6·47	—	—	4·73	35·9	5·95	—	—	4·51
18·7	—	—	—	1·16	25·3	—	—	—	1·09
—	—	—	—	—	—	—	—	—	—
·7	—	—	—	·03	1·3	·21	·10	·10	·09
—	—	—	—	—	5·3	—	—	—	·11
50·3	6·47	—	—	5·92	67·6	6·16	·10	·10	5·90
—	—	—	—	—	·6	—	—	—	·01
—	—	—	—	—	·1	—	—	—	—
12·2	—	—	—	·83	15·5	—	—	—	1·37
7·2	—	1·44	·72	·60	20·7	—	·84	·63	1·78
22·3	—	—	—	1·55	19·0	—	—	—	1·27
41·7	—	1·44	·72	2·98	55·2	—	·84	·63	4·42
—	—	—	—	—	—	—	—	—	—
5·7	—	—	—	·13	·8	—	—	—	·02
3·6	—	—	—	·08	8·4	·10	—	—	·26
2·2	—	—	—	·11	12·4	—	1·57	·84	·79
17·3	—	·72	—	·59	19·3	—	·63	·52	1·12
·7	·72	—	—	·21	2·2	·73	1·46	1·36	·83
4·3	—	—	—	·41	4·4	—	·21	—	·35
3·6	—	—	—	·11	7·0	·53	·63	·31	·32
1·4	—	·72	1·44	·19	1·5	—	1·04	·84	·25
10·1	—	—	·72	·50	12·3	—	·54	·63	·70
10·8	—	·72	1·44	·45	8·8	—	·52	·73	·41
13·7	·72	·72	·72	1·55	9·7	·52	2·09	1·77	·70
26·8	—	—	—	1·35	27·0	·63	1·97	1·25	1·63
90·6	·72	—	—	2·61	105·5	·31	1·25	·84	5·06
4·3	—	—	—	·98	13·4	—	·10	·21	1·16
1·4	—	—	—	·07	2·0	·10	·10	—	·09
11·5	—	—	—	·41	18·6	—	·10	·10	·96
5·8	—	—	·72	·68	10·6	·10	1·25	1·04	·84
18·0	—	—	—	·89	29·3	—	·10	—	·95
32·4	—	—	—	1·23	56·5	—	·10	—	1·04
—	—	—	—	—	·3	·10	—	—	·03
—	—	—	—	—	1·0	·42	—	—	·10
102·2	—	—	—	4·21	110·6	·63	1·04	·63	4·11
1·4	—	—	—	·09	3·4	—	—	—	·07
—	—	—	—	—	—	—	—	—	—
461·9	8·63	4·32	5·75	25·75	589·3	10·33	15·85	11·79	30·32
536·0	10·10	15·19	9·53	30·67	—	—	—	—	—

the eight years 1886 to 1893 will be given in the Report for 1894; those for the nine years that for 1886, &c., &c.

**ABSTRACT No. VII.—TABLE showing the AVERAGE STRENGTH, ADMISSIONS the WHITE TROOPS stationed in the WEST INDIES during the Year 1893, with**

Average Strength, 1,261.		Admissions into Hospital.	Deaths.			Invalids.		Average Number constantly Sick.
Diseases.			In the Com-mand.	Of Invalids.	Total.	Number sent Home.	Number finally Dis-charged the Service.	
I.—GENERAL DISEASES.								
GROUP "A."								
Sub-Group I.	{ Small-pox	—	—	—	—	—	—	—
	{ Other Eruptive Fevers	—	—	—	—	—	—	—
	{ Enteric Fever	10	5	—	5	—	—	*78
	{ Other Continued Fevers	61	—	—	—	—	—	2*00
	{ Yellow Fever	—	—	—	—	—	—	—
	{ Cholera	—	—	—	—	—	—	—
	{ Dysentery	5	—	—	—	—	—	*50
	{ Other Diseases	69	—	—	—	—	—	1*92
	Total	145	5	—	5	—	—	5*20
Sub-Group II.—Malarial Fevers		38	1	—	1	2	1	1*67
Sub-Group III.—Septic Diseases		—	—	—	—	—	—	—
Sub-Group IV.	{ Syphilis, Primary	38	—	—	—	—	—	4*13
	{ " " Secondary	60	—	—	—	—	—	6*45
	{ Gonorrhœa	219	—	—	—	—	—	19*12
	Total	317	—	—	—	—	—	29*70
Sub-Group V.—Hydrophobia, &c.		—	—	—	—	—	—	—
GROUP "B."								
Sub-Group I.—Parasitic Diseases		—	—	—	—	—	—	—
Sub-Group II.	{ Scurvy	—	—	—	—	—	—	—
	{ Alcoholism	13	—	—	—	—	—	*28
GROUP "C."								
Debility, &c.		20	—	—	—	3	1	1*53
GROUP "D."								
Rheumatism		52	—	—	—	3	3	3*95
Tubercular Diseases		2	—	—	—	1	—	*44
Other Diseases		16	—	—	—	—	—	1*28
II.—LOCAL DISEASES.								
Diseases of the—								
1. Nervous System { Nervous Diseases		18	—	—	—	3	4	1*11
{ Mental " "		2	—	—	—	2	2	*14
2. Eye " "		11	—	—	—	2	2	*58
3 & 4. Other Organs of Special Senses		42	—	—	—	2	1	2*71
5. Circulatory System		9	1	—	1	2	2	*80
6. Respiratory " "		21	—	—	—	1	—	1*43
7. Digestive " "		115	—	—	—	3	3	4*53
8. Lymphatic and Glandular System		68	—	—	—	—	—	7*75
9. Urinary System		2	—	—	—	—	—	*16
10. Generative " "		121	—	—	—	—	—	8*69
11. Organs of Locomotion		22	—	—	—	2	1	1*37
12. Connective Tissue		59	—	—	—	—	—	2*70
13. Skin		82	—	—	—	1	—	3*32
III.—POISONS		—	1	—	1	—	—	—
IV.—INJURIES.								
1. General		—	—	—	—	—	—	—
2. Local		133	—	—	—	1	1	5*2
3. In Action		—	—	—	—	—	—	—
No appreciable disease		2	—	—	—	—	—	*0
Cause unknown (refers to deaths only)		—	—	—	—	—	—	—
General Total		1,310	8	—	8	23	21	84*64
* Average of 10 Years 1883-92		—	—	—	—	—	—	—

† The average ratios for 10 years will be given in future years. The average ratio for the 1886 to 1894 is

into HOSPITAL, DEATHS, NUMBERS INVALIDED and CONSTANTLY SICK among the Ratios per 1,000 of the Strength, and the Average Ratios for 10 Years.\*

Ratio per 1,000.					Average Ratio per 1,000 from 1886 to 1892.†				
Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.	Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
—	—	—	—	—	—	—	—	—	—
7·9	3·97	—	—	·62	6·3	—	—	—	·19
48·4	—	—	—	1·59	11·2	2·33	·13	—	1·62
—	—	—	—	—	99·9	·26	—	—	3·57
—	—	—	—	—	1·4	·91	—	—	·03
4·0	—	—	—	·39	7·5	·65	·26	—	·40
54·7	—	—	—	1·52	9·5	—	—	—	·22
115·0	3·97	—	—	4·12	135·8	4·15	·39	—	6·04
30·1	·79	1·59	·79	1·33	45·5	1·16	·52	—	2·08
—	—	—	—	—	·6	—	—	—	·04
30·1	—	—	—	3·28	41·4	—	—	—	3·46
47·6	—	—	—	5·11	35·5	·26	2·33	·91	3·73
173·7	—	—	—	15·16	149·1	—	·26	—	10·55
251·4	—	—	—	23·55	226·0	·26	2·59	·91	17·74
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	1·6	—	—	—	·04
10·3	—	—	—	·22	7·9	—	—	—	·21
15·9	—	2·38	·79	1·21	15·2	—	2·08	1·16	·97
41·2	—	2·38	2·38	3·13	37·1	·13	·91	·52	2·09
1·6	—	·79	—	·35	1·3	·26	1·04	·91	·25
12·7	—	—	—	1·02	6·5	·13	·26	·26	·48
14·2	—	2·38	3·17	·88	13·8	·39	2·08	1·68	·96
1·6	—	1·59	1·59	·11	·6	—	·52	·78	·16
8·7	—	1·59	1·59	·46	14·4	—	·91	·91	·88
33·3	—	1·59	·79	2·15	20·4	—	·78	·65	·80
7·1	·79	1·59	1·59	·03	11·4	·52	2·20	2·08	·92
16·7	—	·79	—	1·14	33·2	·91	·52	·78	1·64
91·2	—	2·38	2·38	3·59	110·4	·39	1·69	1·04	3·19
53·9	—	—	—	6·15	41·5	—	·52	·39	4·25
1·6	—	—	—	·13	1·7	·26	·12	·13	·08
96·0	—	—	—	6·89	113·5	—	·26	·26	7·69
17·4	—	1·59	·79	1·09	7·7	·13	1·29	·65	·64
46·8	—	—	—	2·14	38·8	—	—	·13	1·54
65·0	—	·79	—	2·63	82·7	—	·39	·13	3·23
—	·79	—	—	—	·5	—	—	—	·01
—	—	—	—	—	·3	·13	—	—	·08
105·5	—	·79	·79	4·18	149·5	·78	·65	·39	5·14
1·6	—	—	—	·02	4·8	—	—	—	·09
—	—	—	—	—	·13	—	—	—	—
1038·8	6·34	22·20	16·65	67·12	1122·7	9·73	19·72	13·75	61·24
1075·9	10·09	23·35	13·26	57·55	—	—	—	—	—

eight years 1886 to 1893 will be given in the Report for 1894; those for the nine years that for 1895, &c., &c.

ABSTRACT No. VIII.—TABLE showing the AVERAGE STRENGTH, ADMISSIONS the BLACK TROOPS stationed in the WEST INDIES during the Year 1893, with

Average Strength, 1,557.		Admissions into Hospital.	Deaths.			Invalids.			Average Number constantly Sick.
Diseases.	In the Com- mand.		Of Invalids.	Total.	Number sent Home.	Number finally Dis- charged the Service.			
<b>I.—GENERAL DISEASES.</b>									
<b>GROUP "A."</b>									
Sub-Group I.	Small-pox	—	—	—	—	—	—	—	
	Other Eruptive Fevers	6	—	—	—	—	—	.22	
	Enteric Fever	8	4	—	4	—	—	1.23	
	Other Continued Fevers	105	—	—	—	—	—	3.37	
	Yellow Fever	—	—	—	—	—	—	—	
	Cholera	—	—	—	—	—	—	—	
	Dysentery	20	—	—	—	—	—	.70	
	Other Diseases	35	—	—	—	—	—	1.31	
	Total	174	4	—	4	—	—	6.83	
Sub-Group II.—Malarial Fevers		54	—	—	—	—	—	2.92	
Sub-Group III.—Septic Diseases		—	—	—	—	—	—	—	
Sub-Group IV.	Syphilis, Primary	193	—	—	—	—	—	19.58	
	" Secondary	84	—	—	—	—	19	10.15	
	Gonorrhoea	218	—	—	—	—	—	18.00	
	Total	495	—	—	—	—	19	46.33	
Sub-Group V.—Hydrophobia, &c.		—	—	—	—	—	—	—	
<b>GROUP "B."</b>									
Sub-Group I.—Parasitic Diseases		1	—	—	—	—	—	.02	
Sub-Group II.	Scurvy	—	—	—	—	—	—	—	
	Alcoholism	—	—	—	—	—	—	—	
<b>GROUP "C."</b>									
Debility, &c.		7	—	—	—	—	1	.84	
<b>GROUP "D."</b>									
Rheumatism		61	—	—	—	—	6	5.10	
Tubercular Diseases		13	6	—	6	—	4	1.73	
Other Diseases		5	1	—	1	—	1	.96	
<b>II.—LOCAL DISEASES.</b>									
Diseases of the—									
1. Nervous System { Nervous Diseases		9	—	—	—	—	3	.51	
{ Mental		1	—	—	—	—	—	.06	
2. Eye		42	—	—	—	—	5	2.95	
3 & 4. Other Organs of Special Senses		10	—	—	—	—	2	.92	
5. Circulatory System		12	1	—	1	—	2	1.55	
6. Respiratory		67	—	—	—	—	1	4.06	
7. Digestive		83	1	—	1	—	1	3.48	
8. Lymphatic and Glandular System		53	—	—	—	—	1	6.29	
9. Urinary System		5	—	—	—	—	2	.41	
10. Generative		106	—	—	—	—	3	8.52	
11. Organs of Locomotion		7	—	—	—	—	—	.64	
12. Connective Tissue		50	—	—	—	—	—	3.19	
13. Skin		113	—	—	—	—	3	6.87	
III.—POISONS		—	—	—	—	—	—	—	
<b>IV.—INJURIES.</b>									
1. General		—	—	—	—	—	—	—	
2. Local		101	—	—	—	—	2	5.76	
3. In Action		—	—	—	—	—	—	—	
No appreciable disease		8	—	—	—	—	—	.81	
Cause unknown (refers to deaths only)		—	—	—	—	—	—	—	
General Total		1,476	13	—	13	—	56	112.10	
* Average of 10 years, 1883-92		—	—	—	—	—	—	—	

† The average ratios for 10 years will be given in future years. The average ratios for 1886 to 1894 in

into HOSPITAL, DEATHS, NUMBERS INVALIDED and CONSTANTLY SICK among the Ratios per 1,000 of the Strength, and the Average Ratios for 10 Years.\*

Ratio per 1,000.					Average Ratio per 1,000 from 1886 to 1892.†				
Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.	Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
—	—	—	—	—	—	—	—	—	·02
3·9	—	—	—	·14	16·5	—	—	—	·87
5·1	2·57	—	—	·79	3·2	1·59	—	—	·24
67·4	—	—	—	2·16	116·7	·40	—	—	3·94
—	—	—	—	—	—	—	—	—	—
12·8	—	—	—	·45	13·7	·40	—	·24	·77
22·5	—	—	—	·84	13·8	—	—	—	·31
111·8	2·57	—	—	4·39	164·0	2·58	—	·24	6·15
34·7	—	—	—	1·88	120·6	2·08	—	·40	3·48
—	—	—	—	—	·5	—	—	—	·02
124·0	—	—	—	12·57	95·8	—	—	—	9·10
53·9	—	—	12·20	6·52	45·1	·12	—	4·88	4·05
140·0	—	—	—	11·95	171·6	—	—	·12	10·21
317·9	—	—	12·20	31·04	312·5	·13	—	5·01	23·36
—	—	—	—	—	—	—	—	—	—
·6	—	—	—	·01	·5	—	—	—	·01
—	—	—	—	—	·1	—	—	—	·01
—	—	—	—	—	·1	—	—	—	—
4·5	—	—	·64	·54	8·8	—	—	4·03	·66
39·2	—	—	3·85	3·28	66·3	—	—	2·69	3·61
8·4	3·85	—	2·57	1·11	7·6	2·69	—	5·37	1·14
3·2	·64	—	·64	·63	5·9	·12	—	3·91	·84
—	—	—	—	—	—	—	—	—	—
5·8	—	—	1·93	·33	11·7	·37	—	2·81	·83
·6	—	—	—	·05	1·2	—	—	1·47	·36
27·0	—	—	3·21	1·80	23·0	—	—	2·44	2·01
6·4	—	—	1·28	·59	6·6	·12	—	·61	·48
7·7	·64	—	1·28	1·00	14·0	1·10	—	4·15	1·33
43·0	—	—	·64	2·61	54·1	2·83	—	1·83	3·63
53·3	·64	—	·64	2·24	73·1	·86	—	1·71	2·12
34·1	—	—	·64	4·04	50·2	—	—	1·10	4·28
3·2	—	—	1·23	·23	2·8	·40	—	·85	·30
67·4	—	—	1·93	5·47	139·7	—	—	2·20	10·50
4·5	—	—	—	·35	10·0	—	—	2·03	·74
32·1	—	—	—	2·05	33·5	—	—	·12	1·68
72·6	—	—	1·93	4·41	84·1	—	—	·73	3·46
—	—	—	—	—	·2	—	—	—	·01
—	—	—	—	—	·6	·61	—	—	—
64·9	—	—	1·28	3·70	85·5	·24	—	·85	2·90
—	—	—	—	·13	8·4	—	—	—	·16
5·1	—	—	—	—	—	—	—	—	—
948·0	8·35	—	35·96	72·00	1290·6	14·41	—	45·54	74·07
1198·6	13·69	—	41·76	69·75	—	—	—	—	—

the eight years 1886 to 1893 will be given in the Report for 1894; those for the nine years that for 1896, &c., &c.



**ABSTRACT No. IX.—TABLE showing the AVERAGE STRENGTH, ADMISSIONS among the BLACK TROOPS stationed at WEST AFRICA during the Year 1893,**

Average Strength, 912.	Admissions into Hospital.	Deaths.			Invalids.		Average Number constantly Sick.
Diseases.		In the Com-mand.	Of Invalids.	Total.	Number sent to West Indies.	Number finally Dis-charged the Service.	
I.—GENERAL DISEASES.							
GROUP "A."							
Sub-Group I.	Small-pox	—	—	—	—	—	—
	Other Eruptive Fevers	—	—	—	—	—	—
	Enteric Fever	—	—	—	—	—	—
	Other Continued Fevers	—	—	—	—	—	—
	Yellow Fever	—	—	—	—	—	—
	Cholera	—	—	—	—	—	—
	Dysentery	5	—	—	—	—	—
Other Diseases	—	—	—	—	—	—	
Total	5	—	—	—	—	—	*44
Sub-Group II.—Malarial Fevers	691	—	—	—	—	1	21'88
Sub-Group III.—Septic Diseases	1	—	—	—	—	—	*02
Sub-Group IV.	Syphilis, Primary	30	—	—	—	—	2'80
	" Secondary	73	—	—	—	6	6'46
	Gonorrhoea	96	—	—	—	—	5'51
Total	199	—	—	—	—	6	14'77
Sub-Group V.—Hydrophobia, &c.	—	—	—	—	—	—	—
GROUP "B."							
Sub-Group I.—Parasitic Diseases	5	—	—	—	—	—	*05
Sub-Group II.	Scurvy	—	—	—	—	—	—
	Alcoholism	—	—	—	—	—	—
GROUP "C."							
Debility, &c.	9	—	—	—	—	1	*59
GROUP "D."							
Rheumatism	66	—	—	—	—	3	4'65
Tubercular Diseases	18	4	—	4	—	1	2'90
Other Diseases	1	—	—	—	—	3	*40
II.—LOCAL DISEASES.							
Diseases of the—							
1. Nervous System { Nervous Diseases	21	—	—	—	—	1	2'43
" { Mental	2	—	—	—	—	—	*22
2. Eye	14	—	—	—	—	1	1'18
3 & 4. Other Organs of Special Senses	10	—	—	—	—	1	1'44
5. Circulatory System	11	—	—	—	—	3	*87
6. Respiratory	59	4	1	5	—	1	2'45
7. Digestive	56	—	—	—	—	—	1'40
8. Lymphatic and Glandular System	26	—	—	—	—	—	1'72
9. Urinary System	—	—	—	—	—	1	—
10. Generative	44	—	—	—	—	2	2'18
11. Organs of Locomotion	13	—	—	—	—	—	1'03
12. Connective Tissue	29	—	—	—	—	—	1'48
13. Skin	167	—	—	—	—	—	7'28
III.—POISONS.							
IV.—INJURIES.							
1. General	—	1	—	1	—	—	—
2. Local	56	1	—	1	—	3	2'87
3. In Action	—	—	—	—	—	—	—
No appreciable disease	—	—	—	—	—	—	—
Cause unknown (refers to deaths only)	—	—	—	—	—	—	—
General Total	1,503	10	1	11	—	30	72'25
* Average of 10 years, 1883-92	—	—	—	—	—	—	—

† The average ratios for 10 years will be given in future years. The average ratios 1886 to 1894 in that

into HOSPITAL, DEATHS, NUMBERS INVALIDED and CONSTANTLY SICK with the Ratios per 1,000 of the Strength, and the Average Ratios for 10 Years.\*

Ratio per 1,000.					Average Ratio per 1,000 from 1886 to 1892.†				
Admissions.	Deaths.	Invalids sent to West Indies.	Invalids finally Discharged.	Constantly Sick.	Admissions.	Deaths.	Invalids sent to West Indies.	Invalids finally Discharged.	Constantly Sick.
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	4·2	—	—	—	·10
—	—	—	—	—	·7	·47	—	—	·08
—	—	—	—	—	9·9	—	—	—	·18
—	—	—	—	—	—	—	—	—	—
5·5	—	—	—	·43	25·8	·70	·47	—	1·58
—	—	—	—	—	19·5	·24	—	—	·70
5·5	—	—	—	·48	60·1	1·41	·47	—	2·64
767·7	—	—	1·10	23·99	939·1	9·40	·94	—	24·44
1·1	—	—	—	·02	1·4	·24	—	—	·01
32·9	—	—	—	3·07	58·0	—	·47	—	5·35
80·1	—	—	6·58	7·08	42·5	—	·46	1·41	4·34
105·2	—	—	—	6·04	151·1	—	—	—	8·55
218·2	—	—	6·58	16·19	251·6	—	4·93	1·41	18·24
—	—	—	—	—	—	—	—	—	—
5·5	—	—	—	·05	4·2	—	—	—	·05
—	—	—	—	—	·9	—	—	—	·03
9·9	—	—	1·10	·63	26·6	—	9·16	—	1·88
72·4	—	—	3·29	5·10	93·7	—	4·46	·94	6·14
19·7	4·39	—	1·10	3·18	8·5	4·23	2·58	·47	1·02
1·1	—	—	3·29	·44	3·8	·24	2·35	·24	·27
23·0	—	—	1·10	2·68	10·6	·94	·94	·24	·70
2·2	—	—	—	·24	1·7	—	·24	·47	·10
15·3	—	—	1·10	1·29	26·6	—	·94	·24	1·57
11·0	—	—	1·10	1·53	7·3	—	·24	—	·46
12·1	—	—	3·29	·95	18·8	1·88	2·11	·24	1·19
64·7	5·48	—	1·10	2·69	61·8	2·11	·24	·24	3·13
61·4	—	—	—	1·54	74·7	·47	·24	·24	2·54
23·5	—	—	—	1·89	57·6	—	1·18	—	5·17
—	—	—	1·10	—	7·5	2·35	·47	—	·64
48·2	—	—	2·19	2·39	75·4	—	·70	—	5·47
14·2	—	—	2·19	1·13	12·4	·24	2·11	·94	1·42
31·8	—	—	—	1·63	39·9	—	—	—	2·05
183·1	—	—	—	7·08	148·8	—	·24	—	6·89
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
—	1·10	—	—	—	·5	·70	—	—	·01
61·4	1·10	—	3·29	3·15	81·3	·70	·24	—	3·53
—	—	—	—	—	5·6	·47	·70	—	·43
—	—	—	—	—	1·7	—	—	—	·10
—	—	—	—	—	—	—	—	—	—
1648·0	12·06	—	32·90	79·22	2022·1	25·38	35·48	5·64	20·12
1876·5	23·82	30·83	7·00	83·20	—	—	—	—	—

for the eight years 1886 to 1893 will be given in the Report for 1894, those for the nine years for 1896, &c., &c.

ABSTRACT No. X.—TABLE showing the AVERAGE STRENGTH, ADMISSIONS among the TROOPS stationed at SOUTH AFRICA and ST. HELENA average Ratios for 10 Years.\*

Average Strength, 3,214.		Admissions into Hospital.	Deaths.			Invalids.		
Diseases.			In the Com-mand.	Of Invalids.	Total.	Number sent Home.	Number finally dis-charged the Service.	Average Number constantly Sick.
I.—GENERAL DISEASES.								
GROUP "A."								
Sub-Group I.	Small-pox	—	—	—	—	—	—	—
	Other Eruptive Fevers	6	—	—	—	—	—	·80
	Enteric Fever	27	3	—	3	1	—	4·64
	Other Continued Fevers	131	—	—	—	—	—	5·20
	Yellow Fever	—	—	—	—	—	—	—
	Cholera	—	—	—	—	—	—	—
	Dysentery	19	—	—	—	1	—	1·11
	Other Diseases	42	—	—	—	—	—	·89
Total		225	3	—	3	2	—	12·34
Sub-Group II.—Malarial Fevers		212	—	—	—	10	1	8·12
Sub-Group III.—Septic Diseases		8	—	—	—	—	—	·34
Sub-Group IV.	Syphilis, Primary	185	—	—	—	—	—	16·63
	" Secondary	161	—	—	—	11	2	16·98
	Gonorrhoea	376	—	—	—	2	—	29·26
Total		722	—	—	—	13	2	62·87
Sub-Group V.—Hydrophobia, &c.		—	—	—	—	—	—	—
GROUP "B."								
Sub-Group I.—Parasitic Diseases		3	—	—	—	—	—	·05
Sub-Group II.	Scurvy	—	—	—	—	—	—	—
	Alcoholism	6	—	—	—	—	—	·10
GROUP "C."								
Debility, &c.		19	—	—	—	5	2	1·49
GROUP "D."								
Rheumatism		109	—	—	—	2	—	5·46
Tubercular Diseases		7	—	—	—	4	3	1·01
Other Diseases		26	1	—	1	3	2	2·51
II.—LOCAL DISEASES.								
Diseases of the—								
1. Nervous System {	Nervous Diseases	17	1	—	1	3	2	·94
	Mental	3	—	—	—	2	2	·40
	2. Eye	49	—	—	—	—	—	2·28
	3 & 4. Other Organs of Special Senses	39	—	—	—	4	2	3·71
	5. Circulatory System	29	3	—	3	7	5	3·53
	6. Respiratory	102	3	—	3	3	2	6·06
	7. Digestive	378	—	—	—	5	6	11·13
	8. Lymphatic and Glandular System	65	—	—	—	1	2	7·36
	9. Urinary System	14	1	—	1	4	1	2·58
	10. Generative	160	—	—	—	—	—	10·40
	11. Organs of Locomotion	40	—	—	—	6	4	2·53
	12. Connective Tissue	87	—	—	—	—	—	3·78
	13. Skin	186	—	—	—	—	—	7·36
III.—POISONS								
IV.—INJURIES.								
1. General		2	3	—	3	—	—	·04
2. Local		413	2	—	2	5	2	19·06
3. In Action		—	—	—	—	—	—	—
No appreciable disease		9	—	—	—	—	—	·44
Cause unknown (refers to deaths only)		—	—	—	—	—	—	—
General Total		2,930	17	—	17	79	38	176·21
* Average of 10 years, 1883-92		—	—	—	—	—	—	—

† The average ratios for 10 years will be given in future years. The average ratios for 1886 to 1894 in

into HOSPITAL, DEATHS, NUMBERS INVALIDED and CONSTANTLY SICK during the Year 1893, with the Ratios per 1,000 of the Strength, and the

Ratio per 1,000.					Average Ratio per 1,000 from 1886 to 1892.†				
Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.	Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
—	—	—	—	—	—	—	—	—	—
1.9	—	—	—	.16	1.0	—	—	—	.06
8.4	.93	.31	—	1.44	8.2	1.76	—	—	1.19
40.8	—	—	—	1.62	37.3	.04	—	—	1.73
—	—	—	—	—	—	—	—	—	—
5.9	—	.31	—	.35	6.3	.17	.67	.08	.64
13.1	—	—	—	.29	7.1	—	—	—	.22
70.1	.93	.62	—	3.84	59.9	1.96	.67	.08	3.84
66.0	—	3.11	.31	2.53	18.8	.04	.04	—	.66
2.5	—	—	—	.11	1.9	—	.04	—	.11
57.5	—	—	—	5.18	91.5	—	—	—	7.40
50.1	—	3.42	.62	5.28	59.5	.33	3.34	1.67	5.34
117.0	—	.63	—	9.10	93.3	—	.25	1.08	6.25
224.6	—	4.04	.62	19.56	244.3	.33	3.59	1.75	18.99
—	—	—	—	—	—	—	—	—	—
.9	—	—	—	.02	2.2	—	—	.13	.04
1.9	—	—	—	.03	3.9	—	.04	—	.10
5.9	—	1.56	.62	.46	15.6	—	3.93	1.46	1.61
33.9	—	.63	—	1.70	42.1	.13	1.80	.59	3.10
2.2	—	1.25	.93	.31	2.7	.59	1.42	1.25	.65
8.1	.31	.93	.62	.78	4.7	.08	.59	.33	.38
5.3	.31	.93	.62	.29	8.2	.54	1.71	1.50	.78
.9	—	.62	.63	.12	1.2	.13	1.00	1.00	.29
15.2	—	—	—	.71	17.2	—	1.25	1.06	1.25
12.1	—	1.25	.62	1.16	7.2	.04	.75	.67	.66
9.0	.93	2.18	1.56	1.10	11.2	.21	3.76	2.47	1.45
31.7	.93	.93	.62	1.88	24.9	.59	1.33	.75	1.75
117.6	—	1.56	1.87	3.46	89.9	.50	1.55	.88	3.36
20.2	—	.31	.62	2.29	36.1	—	.13	.13	3.34
4.4	.31	1.25	.31	.80	3.6	.08	.46	.29	.26
49.8	—	—	—	3.24	48.8	.04	.46	.42	3.13
13.4	—	1.87	1.25	.88	7.4	—	.54	.67	.58
27.1	—	—	—	1.18	27.8	—	.04	—	1.20
57.9	—	—	—	2.29	59.0	—	.29	.13	2.64
—	—	—	—	—	.3	.04	—	—	—
.6	.93	—	—	.01	1.7	.92	.25	.04	.11
128.5	.62	1.56	.62	5.94	103.1	.59	1.05	.67	4.53
—	—	—	—	—	—	.08	—	.08	—
2.8	—	—	—	.14	1.8	—	—	—	.07
—	—	—	—	—	—	—	—	—	—
911.6	5.29	24.58	11.82	54.83	844.5	6.89	26.74	16.34	54.70
817.1	7.02	30.40	17.15	52.69	—	—	—	—	—

the eight years, 1886 to 1893 will be given in the Report for 1894; those for the nine years that for 1895, &c., &c.

**ABSTRACT No. XI.—TABLE showing the AVERAGE STRENGTH, ADMISSIONS among the TROOPS stationed at MAURITIUS during the Year 1893, with**

Average Strength, 551.		Admissions into Hospital.	Deaths.			Invalids.		Average Number constantly Sick.
Diseases.			In the Com- mand.	Of Invalids.	Total.	Number sent Home.	Number finally Dis- charged the Service.	
I.—GENERAL DISEASES.								
GROUP "A."								
Sub-Group I.	Small-pox	—	—	—	—	—	—	—
	Other Eruptive Fevers	1	—	—	—	—	—	·04
	Enteric Fever	3	2	1	3	—	—	·43
	Other Continued Fevers	—	—	—	—	—	—	—
	Yellow Fever	—	—	—	—	—	—	—
	Cholera	—	—	—	—	—	—	—
	Dysentery	4	—	—	—	2	—	·13
	Other Diseases	9	—	—	—	—	—	·29
Total		17	2	1	3	2	—	·89
Sub-Group II.—Malarial Fevers		607	5	—	5	68	4	21·21
Sub-Group III.—Septic Diseases		—	—	—	—	—	—	—
Sub-Group IV.	{ Syphilis, Primary	17	—	—	—	—	—	·94
	{ " Secondary	7	—	—	—	—	2	·66
	{ Gonorrhoea	42	—	—	—	—	—	2·45
Total		66	—	—	—	—	2	4·05
Sub-Group V.—Hydrophobia, &c.		—	—	—	—	—	—	—
GROUP "B."								
Sub-Group I.—Parasitic Diseases		1	—	—	—	—	—	·02
Sub-Group II.	{ Scurvy	—	—	—	—	—	—	—
	{ Alcoholism	—	—	—	—	—	—	—
GROUP "C."								
Debility, &c.		3	—	1	1	—	—	·10
GROUP "D."								
Rheumatism		10	—	—	—	—	2	·30
Tubercular Diseases		3	—	—	—	3	2	·35
Other Diseases		1	—	—	—	—	—	·03
II.—LOCAL DISEASES.								
Diseases of the—								
1.	Nervous System { Nervous Diseases	4	—	—	—	1	4	·28
	{ Mental	1	—	—	—	1	—	·19
2.	Eye	8	—	—	—	1	—	·60
3 & 4.	Other Organs of Special Senses	14	—	—	—	2	—	1·07
5.	Circulatory System	1	—	—	—	1	1	·07
6.	Respiratory	15	—	—	—	—	—	1·02
7.	Digestive	64	—	—	—	1	—	1·75
8.	Lymphatic and Glandular System	23	—	—	—	—	—	2·24
9.	Urinary System	3	—	—	—	2	—	·33
10.	Generative	32	—	—	—	—	—	1·93
11.	Organs of Locomotion	9	—	—	—	—	—	·57
12.	Connective Tissue	11	—	—	—	—	—	·44
13.	Skin	31	—	—	—	—	—	1·12
III.—POISONS.								
IV.—INJURIES.								
1.	General	1	1	—	1	—	—	·01
2.	Local	76	—	—	—	—	—	2·82
3.	In Action	—	—	—	—	—	—	—
No appreciable disease		—	—	—	—	—	—	—
Cause unknown (refers to deaths only)		—	—	—	—	—	—	—
General Total		1,001	8	2	10	82	15	41·29
* Average of 10 years, 1883-92		—	—	—	—	—	—	—

† The average ratios for 10 years will be given in future years. The average ratios for 1886 to 1894 in

into HOSPITAL, DEATHS, NUMBERS INVALIDED and CONSTANTLY SICK  
the Ratios per 1,000 of the Strength, and the Average Ratios for 10 Years.\*

Ratio per 1,000.					Average Ratio per 1,000, from 1886 to 1892.†				
Admis- sions.	Deaths.	Invalids sent Home.	Invalids finally Dis- charged.	Con- stantly Sick.	Admis- sions.	Deaths.	In- valids sent Home.	Invalids finally Dis- charged.	Con- stantly Sick.
—	—	—	—	—	—	—	—	—	—
1'8	—	—	—	—	3	—	—	—	04
5'5	5'44	—	—	07	15'6	5'00	29	—	11
—	—	—	—	78	2'3	1'18	—	—	73
—	—	—	—	—	—	—	—	—	12
7'3	—	3'63	—	24	27'1	1'18	59	—	60
16'3	—	—	—	53	1'2	—	—	—	02
30'9	5'44	3'63	—	1'62	47'7	7'36	88	—	3'62
1101'6	9'07	123'42	7'26	38'40	521'9	2'06	15'30	29	22'46
—	—	—	—	—	2'1	29	—	—	07
30'9	—	—	—	1'71	43'5	—	—	—	3'48
12'7	—	—	3'63	1'19	29'7	—	2'94	88	2'44
76'2	—	—	—	4'45	111'5	—	—	—	7'15
119'8	—	—	3'63	7'35	184'7	—	2'94	88	13'07
—	—	—	—	—	—	—	—	—	—
1'8	—	—	—	04	3'8	—	—	29	09
—	—	—	—	—	3	—	—	—	01
—	—	—	—	—	3'2	29	—	—	08
5'4	1'81	—	—	18	14'7	—	6'77	2'36	83
18'2	—	—	3'63	54	21'8	—	1'18	29	1'19
5'4	—	5'44	3'63	64	2'3	88	1'18	1'47	28
1'8	—	—	—	05	5'9	—	29	—	24
7'3	—	1'81	7'26	51	10'9	88	2'06	1'18	51
1'8	—	1'81	—	34	2'9	29	2'06	2'36	47
14'5	—	1'81	—	91	12'1	—	2'06	1'18	1'00
25'4	—	3'63	—	1'94	9'4	—	88	5'59	52
1'8	—	1'81	1'81	13	20'0	29	3'83	3'24	1'39
27'2	—	—	—	1'85	21'2	—	88	5'59	1'32
116'2	—	1'81	—	3'18	117'7	2'36	2'65	5'59	4'40
41'8	—	—	—	4'07	52'4	—	29	5'82	5'82
5'4	—	3'63	—	60	4'7	—	1'77	88	52
58'1	—	—	—	3'50	65'9	—	29	5'59	4'27
16'3	—	—	—	1'03	5'3	—	—	—	31
20'0	—	—	—	80	22'1	—	—	—	86
56'3	—	—	—	2'03	55'6	—	—	—	2'76
—	—	—	—	—	—	—	—	—	—
1'8	1'81	—	—	02	1'5	1'18	29	—	03
137'9	—	—	—	5'12	98'6	1'18	29	29	4'01
—	—	—	—	—	3'2	—	—	—	08
—	—	—	—	—	—	—	—	—	—
1816'7	18'14	148'82	27'22	74'94	1311'9	17'06	45'60	17'36	70'21
1547'7	17'30	43'92	14'86	74'75	—	—	—	—	—

the eight years 1886 to 1893 will be given in the Report for 1894; those for the nine years  
that for 1895, &c., &c.



**ABSTRACT No. XII.—TABLE showing the AVERAGE STRENGTH, ADMISSIONS the Troops stationed at CEYLON during the Year 1893, with the Ratios**

Average Strength, 1,436.				Admissions into Hospital.	Deaths.			Invalids.		Average Number constantly Sick.
Diseases.					In the Com- mand.	Of Invalids.	Total.	Number sent Home.	Number finally Dis- charged the Service.	
I.—GENERAL DISEASES.										
GROUP "A."										
Sub-Group I.	Small-pox	-	-	-	-	-	-	-	-	-
	Other Eruptive Fevers	-	-	-	-	-	-	-	-	-
	Enteric Fever	-	-	1	1	-	1	-	-	.13
	Other Continued Fevers	-	-	43	-	-	-	-	-	1.26
	Yellow Fever	-	-	-	-	-	-	-	-	-
	Cholera	-	-	-	-	-	-	-	-	-
	Dysentery	-	-	25	2	-	2	2	1	1.74
	Other Diseases	-	-	1	-	-	-	-	-	.01
	Total	-	-	70	3	-	3	2	1	3.14
Sub-Group II.—Malarial Fevers				37	-	-	-	-	-	1.12
Sub-Group III.—Septic Diseases				-	-	-	-	-	-	-
Sub-Group IV.	Syphilis, Primary	-	-	89	-	-	-	-	-	10.35
	" Secondary	-	-	99	-	-	-	3	3	8.85
	Gonorrhoea	-	-	191	-	-	-	-	-	11.47
	Total	-	-	379	-	-	-	3	3	30.67
Sub-Group V.—Hydrophobia, &c.				-	-	-	-	-	-	-
GROUP "B."										
Sub-Group I.—Parasitic Diseases				2	-	-	-	-	-	.03
Sub-Group II.	Scurvy	-	-	-	-	-	-	-	-	-
	Alcoholism	-	-	5	-	-	-	-	-	.25
GROUP "C."										
Debility, &c.				12	-	-	-	3	1	.82
GROUP "D."										
Rheumatism				48	-	-	-	-	-	2.09
Tubercular Diseases				-	-	-	-	-	-	-
Other Diseases				11	1	-	1	1	1	.53
II.—LOCAL DISEASES.										
Diseases of the—										
1. Nervous System { Nervous Diseases				18	-	-	-	3	1	.91
2. Eye - { Mental				16	-	-	-	-	-	-
3 & 4. Other Organs of Special Senses				17	-	-	-	1	-	1.12
5. Circulatory System				7	2	-	2	2	2	.58
6. Respiratory "				36	1	-	1	-	-	1.12
7. Digestive "				123	1	-	1	3	1	3.98
8. Lymphatic and Glandular System				74	-	-	-	-	-	8.62
9. Urinary System				1	-	-	-	-	1	.04
10. Generative "				61	-	-	-	-	-	3.68
11. Organs of Locomotion				6	-	-	-	-	1	.27
12. Connective Tissue				36	-	-	-	-	-	1.57
13. Skin				80	-	-	-	-	-	4.01
III.—POISONS.										
IV.—INJURIES.										
1. General				1	2	-	2	1	1	.33
2. Local				107	-	-	-	-	-	3.69
3. In Action				-	-	-	-	-	-	-
No appreciable disease				13	-	-	-	-	-	.14
Cause unknown (refers to deaths only)				-	-	-	-	-	-	-
General Total				1,160	10	-	10	19	13	69.34
* Average of 10 years 1883-92				-	-	-	-	-	-	-

† The average ratios for 10 years will be given in future years. The average ratios for the 1886 to 1894 in

into HOSPITAL, DEATHS, NUMBERS INVALIDED and CONSTANTLY SICK among per 1,000 of the Strength, and the Average Ratios for 10 Years.\*

Ratio per 1,000.					Average Ratio per 1,000 from 1886 to 1892.†				
Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.	Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
—	—	—	—	—	—	—	—	—	.01
—	—	—	—	—	.4	—	—	—	.01
.7	.70	—	—	.09	10.6	4.08	—	—	1.17
29.9	—	—	—	.87	76.7	.25	—	—	2.44
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	.1	.13	—	—	—
17.4	1.39	1.39	.70	1.21	21.0	.89	1.40	.13	1.73
.7	—	—	—	.01	4.6	—	—	—	.09
48.7	2.09	1.39	.70	2.13	113.4	5.35	1.40	.13	5.45
25.7	—	—	—	.78	35.8	.26	.38	—	1.18
—	—	—	—	—	.8	—	—	—	.01
62.0	—	—	—	7.21	68.5	—	.13	—	5.24
68.9	—	2.09	2.09	6.16	52.5	—	1.65	1.40	4.07
133.0	—	—	—	7.99	134.7	—	.13	.13	7.14
263.9	—	2.09	2.09	21.36	255.7	—	1.91	1.53	16.45
—	—	—	—	—	—	—	—	—	—
1.4	—	—	—	.02	1.7	—	—	—	.02
—	—	—	—	—	—	—	—	—	—
3.5	—	—	—	.17	4.3	.13	—	—	.14
—	—	—	—	—	—	—	—	—	—
8.3	—	2.09	.70	.57	17.7	—	3.31	1.85	1.11
—	—	—	—	—	—	—	—	—	—
33.4	—	—	—	1.46	27.9	—	—	—	1.48
—	—	—	—	—	4.3	1.15	2.67	2.55	.82
7.6	.69	.69	.70	.37	11.5	—	.76	.38	.81
—	—	—	—	—	—	—	—	—	—
12.5	—	2.09	.70	.64	9.9	.64	1.66	1.37	.62
—	—	—	—	—	1.8	—	1.66	1.63	.65
11.1	—	.70	—	.78	13.3	—	.76	.76	.73
11.8	—	—	—	.44	17.3	—	.23	.26	.67
4.9	1.39	1.39	1.39	.40	8.8	.78	1.40	.64	.35
25.0	.70	—	—	.78	25.5	.78	1.15	.38	1.68
85.6	.70	2.09	.70	.78	102.6	1.68	1.15	.26	3.91
52.2	—	—	—	2.77	68.3	—	.26	—	7.02
.7	—	—	—	.03	3.6	—	.38	.26	.31
42.4	—	—	—	2.56	115.2	—	.26	—	7.22
4.2	—	—	.70	.19	7.3	—	.89	.64	.59
25.0	—	—	—	1.10	22.2	—	—	—	.88
55.7	—	—	—	2.79	74.1	—	—	—	2.88
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
.7	1.39	.70	.70	.23	2.3	1.78	.13	—	.12
74.5	—	—	—	2.57	102.4	.38	.38	.51	3.93
—	—	—	—	—	—	—	—	—	—
9.0	—	—	—	.10	3.9	—	—	—	.07
—	—	—	—	—	—	—	—	—	—
807.8	6.96	13.23	9.05	48.29	1061.6	12.87	20.77	13.87	59.60
1092.6	12.44	25.83	13.38	59.86	—	—	—	—	—

\* Eight years 1886 to 1893 will be given in the Report for 1894; those for the nine years that for 1895, &c., &c.



ABSTRACT No. XIII.—TABLE showing the AVERAGE STRENGTH, ADMISSIONS among the TROOPS stationed in CHINA during the Year 1893, with the

Average Strength, 1,414.		Admissions into Hospital.	Deaths.			Invalids.		Average Number constantly Sick.
Diseases.			In the Com-mand.	Of Invalids.	Total.	Number sent Home.	Number finally Dis-charged the Service.	
I.—GENERAL DISEASES.								
GROUP "A."								
Sub-Group I.	Small-pox	4	—	—	—	—	—	·16
	Other Eruptive Fevers	—	—	—	—	—	—	—
	Enteric Fever	3	3	—	3	—	—	·07
	Other Continued Fevers	23	—	—	—	—	—	1·23
	Yellow Fever	—	—	—	—	—	—	—
	Cholera	—	—	—	—	—	—	—
	Dysentery	13	1	—	1	—	—	·96
	Other Diseases	2	—	—	—	—	—	·03
Total		45	4	—	4	—	—	2·45
Sub-Group II.—Malarial Fevers		772	3	—	3	8	1	30·32
Sub-Group III.—Septic Diseases		—	—	—	—	—	—	—
Sub-Group IV.	Syphilis, Primary	69	—	—	—	—	—	6·86
	" Secondary	68	—	—	—	—	—	5·75
	Gonorrhœa	225	—	—	—	—	—	14·98
Total		362	—	—	—	—	—	27·59
Sub-Group V.—Hydrophobia, &c.		—	—	—	—	—	—	—
GROUP "B."								
Sub-Group I.—Parasitic Diseases		2	—	—	—	—	—	·06
Sub-Group II.	Scurvy	—	—	—	—	—	—	—
	Alcoholism	2	—	—	—	—	—	·05
GROUP "C."								
Debility, &c.		33	—	1	1	1	1	1·77
GROUP "D."								
Rheumatism		30	—	—	—	1	1	2·30
Tubercular Diseases		8	—	—	—	3	2	1·31
Other Diseases		16	1	—	1	2	—	1·48
II.—LOCAL DISEASES.								
Diseases of the—								
1. Nervous System { Nervous Diseases		7	2	—	2	—	1	·46
{ Mental " "		5	—	—	—	4	3	·40
2. Eye		12	—	—	—	—	—	·70
3 & 4. Other Organs of Special Senses		13	—	—	—	—	—	·32
5. Circulatory System		26	2	—	2	3	3	2·73
6. Respiratory "		27	2	—	2	—	—	1·79
7. Digestive		122	—	—	—	1	1	6·08
8. Lymphatic and Glandular System		68	—	—	—	—	—	7·20
9. Urinary System		6	1	—	1	1	—	·69
10. Generative "		213	—	—	—	—	—	16·37
11. Organs of Locomotion		10	—	—	—	—	—	·65
12. Connective Tissue		48	—	—	—	—	—	1·96
13. Skin		58	—	—	—	—	—	2·54
III.—POISONS								
IV.—INJURIES.								
1. General		2	2	—	2	—	—	·02
2. Local		127	—	—	—	1	1	6·72
3. In Action		—	—	—	—	—	—	—
No appreciable disease		1	—	—	—	—	—	·01
Cause unknown (refers to deaths only)		—	—	—	—	—	—	—
General Total		2,015	17	1	18	25	14	115·97
* Average of 10 years, 1883-92		—	—	—	—	—	—	—

† The average ratios for 10 years will be given in future years. The average ratios for the 1886 to 1894 in

into HOSPITAL, DEATHS, NUMBERS INVALIDED and CONSTANTLY SICK  
 Ratios per 1,000 of the Strength, and the Average Ratios for 10 years.\*

Ratio per 1,000.					Average Ratio per 1,000 from 1886 to 1892.†				
Admis- sions.	Deaths.	Invalids sent Home.	Invalids finally Dis- charged.	Con- stantly Sick.	Admis- sions.	Deaths.	Invalids sent Home.	Invalids finally Dis- charged.	Con- stantly Sick.
2'8	—	—	—	'11	1'2	—	—	—	'10
2'1	2'12	—	—	'05	1'1	—	'11	—	'15
16'8	—	—	—	'87	11'1	'22	—	—	'30
—	—	—	—	—	'3	'38	—	—	—
9'2	'71	—	—	'68	14'4	'44	'66	—	'74
1'4	—	—	—	'02	'7	—	—	—	'02
31'8	2'89	—	—	1'73	28'8	'99	'77	—	1'31
546'0	2'12	5'66	'71	21'44	444'6	2'42	3'08	'44	10'72
—	—	—	—	—	'3	—	—	—	'01
48'8	—	—	—	4'85	29'3	—	—	—	2'77
48'1	—	—	—	4'07	43'7	'11	1'54	'66	2'83
159'1	—	—	—	10'59	113'6	—	—	—	7'31
256'0	—	—	—	19'51	186'6	'11	1'54	'66	13'01
—	—	—	—	—	—	—	—	—	—
1'4	—	—	—	'04	'9	—	—	—	'01
—	—	—	—	—	—	'11	—	—	—
1'4	—	—	—	'04	3'6	'11	—	—	'19
23'3	'71	'71	'71	1'25	19'2	—	1'54	1'32	'85
21'2	—	'71	'71	1'63	17'2	—	'55	'11	'72
5'7	—	2'13	1'41	'93	4'3	'77	2'42	'99	'71
11'3	'71	1'41	—	1'05	5'7	'22	'11	'22	'46
5'0	1'41	—	'71	'32	5'8	'22	'55	'44	'37
3'5	—	2'83	2'12	'28	1'2	'11	'44	'55	'25
8'5	—	—	—	'50	7'8	—	'44	'23	'44
9'2	—	—	—	'23	11'7	—	'33	'44	'44
18'4	1'41	2'12	2'12	1'83	12'7	'77	2'42	2'20	'87
19'1	1'41	—	—	1'27	29'5	'33	1'10	'66	1'58
86'3	—	'71	'71	4'30	94'8	'55	1'99	'66	3'68
48'1	—	—	—	5'09	18'9	—	'22	'11	1'63
4'2	'71	'71	—	'48	3'6	'11	'22	'11	'35
150'6	—	—	—	11'57	116'0	'11	—	—	8'47
7'1	—	—	—	'48	8'7	—	'77	'66	'60
34'0	—	—	—	1'39	23'8	—	'22	'11	1'10
41'0	—	—	—	1'80	50'9	—	'22	—	2'03
—	—	—	—	—	'4	—	—	—	—
1'4	1'41	—	—	'01	1'6	1'76	—	—	'12
89'8	—	'71	'71	4'75	85'0	1'21	'88	'88	3'58
—	—	—	—	—	'7	—	—	—	—
'7	—	—	—	'01	—	—	—	—	'04
1425'0	12'73	17'68	9'90	82'01	1184'3	9'90	19'81	10'78	53'54
1117'3	10'30	25'06	—	52'56	—	—	—	—	—

eight years 1886 to 1893 will be given in the Report for 1894; those for the nine years  
 that for 1895, &c., &c.

ABSTRACT No. XIV.—TABLE showing the AVERAGE STRENGTH, ADMIS-  
among the TROOPS stationed in the STRAITS SETTLEMENTS during  
Ratios for 10 years.\*

Average Strength, 1,883.		Admissions into Hospital.	Deaths.			Invalids.		Average Number constantly Sick.	
Diseases.			In the Com- mand.	Of Invalids.	Total.	Number sent Home.	Number finally Dis- charged the Service.		
I.—GENERAL DISEASES.									
GROUP "A."									
Sub-Group I.	Small-pox	1	—	—	—	—	—	·07	
	Other Eruptive Fevers	—	—	—	—	—	—	·90	
	Enteric Fever	1	—	—	—	—	—	2·57	
	Other Continued Fevers	99	—	—	—	—	—	—	
	Yellow Fever	—	—	—	—	—	—	—	
	Cholera	—	—	—	—	—	—	·30	
	Dysentery	6	—	—	—	—	—	—	
Other Diseases		—	—	—	—	—	—	—	
Total		107	—	—	—	—	—	3·64	
Sub-Group II.—Malarial Fevers		40	—	—	—	—	—	1·06	
Sub-Group III.—Septic Diseases		—	—	—	—	—	—	—	
Sub-Group IV.	Syphilis, Primary	161	—	—	—	—	—	14·61	
	" Secondary	137	—	—	—	3	—	14·44	
	Gonorrhœa	119	—	—	—	—	—	8·75	
Total		417	—	—	—	3	—	37·80	
Sub-Group V.—Hydrophobia, &c.		—	—	—	—	—	—	—	
GROUP "B."									
Sub-Group I.—Parasitic Diseases		4	—	—	—	—	—	·04	
Sub-Group II.	Scurvy	—	—	—	—	—	—	—	
	Alcoholism	7	—	—	—	—	—	·30	
GROUP "C."									
Debility, &c.		27	—	—	—	3	—	1·60	
GROUP "D."									
Rheumatism		11	—	—	—	—	—	·53	
Tubercular Diseases		2	1	1	2	1	2	·24	
Other Diseases		1	—	—	—	—	—	·16	
II.—LOCAL DISEASES.									
Diseases of the—									
1. Nervous System { Nervous Diseases		18	—	—	—	1	—	·94	
{ Mental		3	—	—	—	2	2	·08	
2. Eye		11	—	—	—	—	—	·78	
3 & 4. Other Organs of Special Senses		13	—	—	—	—	—	·84	
5. Circulatory System		7	—	—	—	2	2	·38	
6. Respiratory		16	—	—	—	—	—	1·40	
7. Digestive		75	—	—	—	—	—	2·32	
8. Lymphatic and Glandular System		36	—	—	—	—	—	4·17	
9. Urinary System		3	—	—	—	—	—	·20	
10. Generative		33	—	—	—	—	—	2·19	
11. Organs of Locomotion		10	—	—	—	1	—	·58	
12. Connective Tissue		51	—	—	—	—	—	3·11	
13. Skin		67	—	—	—	—	1	4·42	
III.—POISONS									
IV.—INJURIES.									
1. General		1	2	—	3	—	—	·03	
2. Local		101	—	—	—	—	—	4·14	
3. In Action		—	—	—	—	—	—	—	
No appreciable disease		3	—	—	—	—	—	·06	
Cause unknown (refers to deaths only)		—	—	—	—	—	—	—	
General Total		1,064	3	1	4	13	7	77·19	
* Average of 10 years, 1883-92		—	—	—	—	—	—	—	

† The average ratios for 10 years will be given in future years. The average ratios for the  
1895 to 1894 in

SIONS into HOSPITAL, DEATHS, NUMBERS INVALIDED and CONSTANTLY SICK the Year 1893, with the Ratios per 1,000 of the Strength, and the Average

Ratio per 1,000.					Average Ratio per 1,000 from 1886 to 1892.				
Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.	Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
'8	—	—	—	'06	—	—	—	—	—
—	—	—	—	—	—	—	—	—	'01
'8	—	—	—	'74	3'5	1'40	—	—	'44
81'0	—	—	—	2'10	68'3	'12	—	—	2'36
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	'1	'12	—	—	'01
4'9	—	—	—	'24	8'6	'12	'99	'12	1'02
—	—	—	—	—	'2	—	—	—	'01
37'5	—	—	—	3'14	81'0	1'86	'99	'12	3'85
32'7	—	—	—	'82	140'6	—	'12	—	4'22
—	—	—	—	—	—	—	—	—	—
121'6	—	—	—	11'45	84'6	—	—	—	7'75
112'0	—	2'45	—	11'81	89'3	'12	4'59	'99	9'71
97'3	—	—	—	7'15	153'5	—	'37	—	11'32
340'9	—	2'45	—	30'42	327'4	'12	4'96	'99	28'78
—	—	—	—	—	'1	'12	—	—	—
3'3	—	—	—	'03	3'5	—	—	—	'07
—	—	—	—	—	—	—	—	—	—
5'7	—	—	—	'25	8'1	'37	—	—	'31
22'1	—	2'45	—	1'31	18'0	—	1'98	1'74	2'04
9'0	—	—	—	'43	13'9	—	'37	'25	1'06
1'6	1'64	'82	1'64	'20	1'9	'62	1'61	'75	'62
'8	—	—	—	'13	9'7	'25	'12	—	'80
14'7	—	'82	—	'77	5'3	'49	'25	'37	'26
2'5	—	1'64	1'64	'54	1'3	'12	1'12	1'12	'29
9'0	—	—	—	'62	23'6	—	'62	'37	1'13
10'6	—	—	—	'28	16'0	—	'12	'12	'63
5'7	—	1'64	1'64	'72	5'8	'37	1'74	1'99	'86
13'1	—	—	—	1'22	25'4	1'12	1'61	'50	1'76
61'3	—	—	—	1'90	79'2	'25	'87	'60	3'47
29'4	—	—	—	3'41	42'8	—	'12	'12	5'11
2'5	—	—	—	'16	2'5	'12	'37	'37	'45
27'0	—	—	—	1'79	126'9	—	'75	'99	8'86
8'2	—	'82	—	'47	8'4	—	'37	'62	'57
41'7	—	—	—	2'54	33'9	—	'12	—	1'31
54'8	—	—	'82	3'61	80'0	—	—	—	3'38
—	—	—	—	—	'1	—	—	—	'01
'8	1'64	—	—	'02	3'2	1'36	—	—	'22
82'6	—	—	—	3'38	102'2	'25	'75	'62	4'54
—	—	—	—	—	—	—	—	—	—
2'5	—	—	—	'05	2'5	—	—	—	'06
—	—	—	—	—	—	—	—	—	—
370'0	3'27	10'63	5'72	58'21	1163'3	7'44	18'97	11'53	74'38
121'9	6'97	22'74	—	68'10	—	—	—	—	—

Statistics for 1886 to 1892 will be given in the Report for 1894; those for the nine years that for 1893, &c., &c.

ABSTRACT No. XV.—TABLE showing the AVERAGE STRENGTH, ADMIS-  
among the Troops stationed in the BENGAL COMMAND during the Year 1893,

Average Strength 43,001.		Admissions into Hospital.	Deaths			Invalids.	
Diseases.			In the Command.	Of Invalids.	Total.	No. sent Home.	No. finally discharged the Service.
I.—GENERAL DISEASES.							
GROUP "A."							
Sub-Group I.	Small-pox -	13	2	—	2	—	—
	Other Eruptive Fevers -	13	—	—	—	—	—
	Enteric Fever -	1,076	276	—	276	18	—
	Other Continued Fevers -	875	—	—	—	—	—
	Yellow Fever -	—	—	—	—	—	—
	Cholera -	9	5	—	5	1	—
	Dysentery -	961	21	—	21	40	5
	Other Diseases -	7	—	—	—	—	—
Total -		2,954	304	—	304	54	5
Sub-Group II.—Malarial Fevers -		18,184	40	2	42	184	30
Sub-Group III.—Septic Diseases -		71	4	—	4	—	1
Sub-Group IV.	Syphilis, Primary -	4,999	—	—	—	1	—
	" " Secondary -	2,351	3	1	4	131	10
	Gonorrhoea -	8,035	—	—	—	6	—
Total -		15,385	3	1	4	138	10
Sub-Group V.—Hydrophobia, &c. -		4	3	—	3	—	—
GROUP "B."							
Sub-Group I.—Parasitic Diseases -		142	—	—	—	—	—
Sub-Group II.	Scurvy -	15	—	—	—	—	—
	Alcoholism -	175	4	—	4	—	—
GROUP "C."							
Debility, &c. -		860	1	1	2	147	40
GROUP "D."							
Rheumatism -		1,256	1	—	1	43	19
Tubercular Diseases -		122	27	9	36	51	26
Other Diseases -		385	5	—	5	18	6
II.—LOCAL DISEASES.							
Diseases of the—							
1. Nervous System { Nervous Diseases -		311	14	—	14	60	31
" { Mental " -		68	—	—	—	49	55
2. Eye -		502	—	—	—	21	13
3 & 4. Other Organs of Special Senses -		709	1	—	1	43	21
5. Circulatory System -		576	7	2	9	133	106
6. Respiratory " -		1,636	59	2	62	32	12
7. Digestive " -		5,164	63	5	68	74	18
8. Lymphatic and Glandular System -		1,273	2	1	3	27	10
9. Urinary System -		60	5	—	5	11	8
10. Generative " -		4,613	—	—	—	10	3
11. Organs of Locomotion -		408	2	1	3	31	24
12. Connective Tissue -		918	1	—	1	3	1
13. Skin -		3,165	—	—	—	5	—
III.—POISONS -		16	6	—	6	—	—
IV.—INJURIES.							
1. General -		117	39	—	39	2	—
2. Local -		4,167	37	—	37	25	17
3. In Action -		—	—	—	—	—	—
No appreciable disease -		79	—	—	—	—	—
Cause unknown (refers to deaths only) -		—	—	—	—	—	—
General Total -		63,142	619	24	643	1,121	466
* Average of 10 years, 1883-92 -		—	—	—	—	—	—

† The average ratios for 10 years will be given in future years. The average ratios for the 1886 to 1894 in that for

SIONS INTO HOSPITAL, DEATHS, NUMBERS INVALIDED AND CONSTANTLY SICK with the Ratios per 1,000 of the Strength, and the average Ratios for 10 Years.\*

Average Number constantly Sick.	Ratio per 1,000.					Average Ratio per 1,000 from 1886 to 1892.†				
	Admissions.	Deaths.	In-valids sent Home.	In-valids finally Dis-charged.	Con-stantly Sick.	Admissions.	Deaths.	In-valids sent Home.	In-valids finally Dis-charged.	Con-stantly Sick.
1'29	'3	'05	—	—	'03	'9	'06	—	—	'10
'97	'3	—	—	—	'02	2'3	'01	—	—	'06
164'30	25'0	6'42	'30	—	3'82	21'7	5'71	'22	—	3'11
46'16	20'3	—	—	—	1'07	68'8	'04	'01	—	2'47
—	—	—	—	—	—	—	—	—	—	—
'32	'2	'12	'02	—	'01	2'5	1'70	'01	—	'07
72'10	22'3	'49	'03	'12	1'68	25'5	'63	'85	'15	1'65
'44	'2	—	—	—	'01	8'2	'01	—	—	'24
285'58	68'7	7'07	1'26	'12	6'64	129'9	8'18	1'09	'15	7'69
653'60	422'9	'97	3'58	'70	15'20	387'5	'74	1'46	'28	11'90
5'10	1'7	'09	—	'02	'12	2'1	'12	—	—	'14
433'23	116'3	—	'02	—	10'07	96'1	—	'01	—	7'71
252'65	54'7	'09	3'05	'23	5'88	45'4	'10	1'56	'68	4'36
600'04	196'9	—	'14	—	13'95	170'8	—	'07	—	11'99
1285'92	357'8	'09	3'21	'23	29'90	312'3	'10	1'64	'68	24'05
'07	'1	'07	—	—	—	'1	'08	—	—	—
3'46	3'3	—	—	—	'08	3'6	—	—	—	'09
'87	'3	—	—	—	'02	1'0	'01	—	—	'04
6'20	4'1	'09	—	—	'14	11'3	'07	'02	—	'35
65'41	20'2	'05	3'42	'93	1'52	22'7	'02	2'99	1'69	1'53
98'10	29'2	'02	1'00	'44	2'28	31'7	'07	'91	'31	2'12
26'62	2'8	'84	1'19	'60	'62	3'3	'87	1'49	1'11	'72
28'50	9'0	'12	'42	'14	'66	11'1	'15	'45	'17	'70
23'16	7'2	'33	1'16	'72	'54	9'1	'39	1'05	'77	'63
20'98	1'6	—	1'14	1'28	'49	1'6	—	1'13	1'21	'59
33'96	11'7	—	'49	'30	'79	13'9	—	'56	'67	'85
41'31	16'5	'02	1'00	'49	'96	15'2	'01	'82	'64	'74
57'10	8'7	'21	3'09	2'47	1'33	12'0	'40	2'98	2'33	1'23
91'64	38'0	1'21	'74	'23	2'13	39'2	1'08	'67	'35	2'27
230'32	120'1	1'58	1'72	'42	5'36	144'0	1'77	1'93	'62	5'80
163'15	29'6	'07	'63	'23	3'56	27'6	'03	'38	'14	2'76
6'58	1'4	'12	'26	'19	'15	2'1	'15	'25	'15	'20
350'97	107'3	—	'23	'07	8'16	96'0	'01	'26	'24	6'26
32'21	9'5	'07	'72	'56	'75	7'3	'03	'72	'61	'57
44'16	21'3	'02	'07	'02	1'03	22'0	'02	'10	'03	1'00
134'01	73'6	—	'12	—	3'12	69'3	—	'17	'65	2'81
'50	'4	'14	—	—	'01	'4	'10	—	—	'01
7'90	2'7	'91	'05	—	'18	3'8	1'47	'11	'02	'19
205'08	96'9	'86	'58	'39	4'77	109'1	'87	'95	'65	4'07
—	—	—	—	—	—	—	—	'01	'02	—
4'59	1'8	—	—	—	'11	2'4	—	—	—	'10
—	—	—	—	—	—	—	—	—	—	'01
3897'00	1468'4	14'95	26'07	10'60	90'63	1491'3	16'70	22'15	12'79	80'03
—	1514'4	15'64	23'56	13'13	77'54	—	—	—	—	—

eight years, 1886 to 1893 will be given in the Report for 1894; those for the nine years 1895, &c., &c.

ABSTRACT No. XVI.—TABLE, taken from the REPORT of the PRINCIPAL CLASSES of DISEASES in each of the MILITARY DISTRICTS in the BENGAL

Military Districts.	Pre-sidency.		Allaha-bad.		Oudh.		Rohil-khand.		Nar-budda.	
Average Strength.	2,810		2,501		4,897		3,140		1,299	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
<b>I.—GENERAL DISEASES.</b>										
GROUP "A."										
Sub-Group I.	Small-pox -	—	—	—	—	—	2	—	—	—
	Other Eruptive Fevers -	1	—	—	1	—	2	—	—	—
	Enteric Fever -	24	12	50	5	118	89	14	37	5
	Other Continued Fevers -	6	—	14	—	88	62	—	2	—
	Yellow Fever -	—	—	—	—	—	—	—	—	—
	Cholera -	1	1	—	—	—	—	—	—	—
	Dysentery -	112	3	83	1	95	95	1	34	—
	Other diseases -	—	—	1	—	—	—	—	—	—
Total -		144	16	148	6	302	21	250	15	73
Sub-Group II.—Malarial Fevers -		1,057	5	971	—	519	—	355	—	434
Sub-Group III.—Septic Diseases -		2	—	1	—	1	—	5	1	—
Sub-Group IV.	Syphilis, Primary -	370	—	465	—	957	—	860	—	63
	" Secondary -	236	—	205	—	566	1	296	1	134
	Gonorrhoea -	523	—	629	—	1,241	—	785	—	279
Total -		1,129	—	1,299	—	2,504	1	1,941	1	478
Sub-Group V.—Hydrophobia, &c. -		—	—	1	1	1	1	—	—	—
GROUP "B."										
Sub-Group I.—Parasitic Diseases -		18	—	16	—	3	—	4	—	—
Sub-Group II.	Scurvy -	—	—	—	—	1	—	—	—	—
	Alcoholism -	17	1	26	1	17	—	10	—	4
GROUP "C."										
Debility, &c. -		68	—	29	—	107	—	28	—	33
GROUP "D."										
Rheumatism -		90	—	60	—	162	—	123	—	21
Tubercular Diseases -		6	2	12	3	19	5	6	—	5
Other diseases -		18	—	33	—	57	—	23	—	7
<b>II.—LOCAL DISEASES.</b>										
Diseases of the—										
1. Nervous System { Nervous Diseases -		23	1	16	1	31	—	25	1	11
" { Mental " -		1	—	8	—	17	—	8	—	3
2. Eye -		29	—	25	—	105	—	35	—	28
3 & 4. Other Organs of Special Senses -		56	—	96	—	106	—	36	—	29
5. Circulatory System -		15	—	21	—	69	—	23	—	15
6. Respiratory " -		81	4	82	1	102	1	78	—	25
7. Digestive " -		350	4	395	1	498	9	461	4	137
8. Lymphatic and Glandular System -		58	1	113	—	100	—	113	4	75
9. Urinary System -		6	—	5	—	7	—	4	—	4
10. Generative " -		155	—	461	—	178	—	86	—	303
11. Organs of Locomotion -		23	—	23	—	57	—	33	—	11
12. Connective Tissue -		40	—	68	—	119	—	50	—	17
13. Skin -		208	—	336	—	602	—	183	—	76
<b>III.—POISONS.</b>		1	—	—	—	—	1	—	—	1
<b>IV.—INJURIES.</b>										
1. General -		6	2	22	8	2	6	1	—	1
2. Local -		217	3	313	1	567	3	186	3	76
3. In Action -		—	—	—	—	—	—	—	—	—
No appreciable disease -		3	—	12	—	10	—	2	—	5
Cause unknown (refers to deaths only) -		—	—	—	—	—	—	—	—	—
General Total -		3,825	39	4,592	23	6,323	48	4,071	25	1,867

MEDICAL OFFICER, showing the PREVALENCE and MORTALITY of the DIFFERENT COMMAND, with the ratios per 1,000 of Strength during the year 1893.

Bundelkhand.		Meerut.		Sirhind.		Lahore.		Rawal Pindi.		Peshawar.		Quetta.		Marching.		Total.	
2,245		4,055		4,356		4,814		6,408		2,715		2,008		1,663		43,001	
Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
—	—	—	—	1	—	—	1	8	1	1	—	—	—	1	—	13	2
3	—	2	—	2	—	—	—	—	—	—	—	2	—	—	—	13	—
88	28	109	26	165	42	81	29	199	56	76	34	17	5	23	—	1,076	276
162	—	63	—	105	—	148	—	212	—	—	—	1	—	12	—	875	—
—	—	1	—	4	1	3	3	—	—	—	—	—	—	—	—	—	—
47	—	102	4	87	1	125	5	99	3	16	—	27	2	39	—	9	5
2	—	1	—	2	—	—	—	—	—	1	—	—	—	—	—	961	21
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7	—
302	28	278	30	366	44	357	38	518	60	94	34	47	7	75	—	2,954	304
701	1	1,871	—	639	2	3,756	5	2,201	3	2,963	19	2,404	5	223	—	18,184	40
2	—	7	1	5	1	8	—	19	1	8	—	10	—	2	—	71	4
327	—	146	—	494	—	481	—	429	—	82	—	171	—	154	—	4,999	—
77	—	138	—	235	—	266	1	211	—	51	—	95	—	41	—	2,351	3
566	—	634	—	644	—	904	—	1,123	—	206	—	198	—	246	—	8,035	—
970	—	968	—	1,373	—	1,651	1	1,768	—	341	—	464	—	441	—	15,385	3
—	—	—	—	—	—	—	—	—	—	—	—	1	1	—	—	4	3
—	—	9	—	29	—	25	—	24	—	15	—	3	—	1	—	142	—
—	—	3	—	—	—	10	—	1	—	—	—	—	—	—	—	15	—
9	—	8	—	11	—	13	1	38	1	6	—	14	—	2	—	175	4
43	—	60	1	88	—	293	—	81	—	21	—	14	—	4	—	869	1
73	—	78	—	139	—	212	—	164	—	27	—	77	1	30	—	1,256	1
8	2	9	1	12	3	17	3	13	3	5	2	9	1	1	2	122	27
27	—	34	—	44	1	53	—	44	2	14	—	26	1	5	1	385	5
18	—	36	3	25	—	33	4	60	1	6	—	13	2	5	—	311	14
7	—	4	—	5	—	4	—	5	—	2	—	4	—	—	—	68	—
21	—	38	—	45	—	58	—	54	—	26	—	35	—	9	—	502	—
76	—	69	—	29	—	77	1	73	—	22	—	32	—	8	—	709	1
16	—	25	2	37	1	73	1	45	—	12	—	20	1	5	2	376	7
74	—	94	1	140	1	298	13	244	8	103	3	291	17	24	1	1,636	50
296	6	395	6	581	1	719	11	698	8	182	7	361	2	91	—	5,164	63
96	—	154	—	133	1	141	—	167	—	37	—	33	—	48	—	1,273	2
3	1	6	—	2	—	6	1	7	2	6	1	4	—	—	—	60	5
274	—	800	—	193	—	512	—	1,122	—	237	—	134	—	158	—	4,613	—
16	—	34	—	48	—	44	—	73	—	13	1	21	—	12	—	408	—
50	—	93	—	114	—	89	—	126	—	68	—	33	—	40	—	916	1
160	—	230	—	240	—	462	—	379	—	139	—	101	—	49	—	3,165	—
1	—	1	—	1	1	2	2	3	1	1	1	3	—	1	—	16	6
2	—	9	3	5	—	33	9	14	2	13	4	7	1	3	3	117	39
226	1	422	7	519	1	437	3	627	5	230	3	233	6	105	1	4,167	37
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	79	—
3	—	11	—	4	—	9	—	15	—	1	—	3	—	1	—	—	—
3,476	30	5,746	55	4,827	57	9,302	93	8,592	97	4,801	75	4,487	45	1,343	10	63,142	619



Ratio per 1,000

Military Districts.	Pre-sidency.		Allahabad.		Oudh.		Bohilkhand.		Narbudda.		Bundelkhand.	
Average Strength.	2,810		2,501		4,897		3,140		1,290		2,245	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
<b>I.—GENERAL DISEASES.</b>												
<b>GROUP "A."</b>												
Sub-Group I.	Small-pox	—	—	—	—	—	6	—	—	—	—	—
	Other Eruptive Fevers	4	—	—	—	2	23	—	—	—	13	—
	Enteric Fever	85	427	200	200	241	408	446	285	385	392	1247
	Other Continued Fevers	21	—	56	—	180	197	—	15	—	722	—
	Yellow Fever	—	—	—	—	—	—	—	—	—	—	—
	Cholera	4	30	—	—	—	—	—	—	—	—	—
	Dysentery	399	107	332	40	194	20	303	32	262	209	—
	Other Diseases	—	—	4	—	—	—	—	—	—	9	—
Total	512	509	592	240	617	423	796	478	562	385	1345	1247
Sub-Group II.—Malarial Fevers	3762	178	3882	—	1060	—	1131	—	3341	—	3122	46
Sub-Group III.—Septic Diseases	7	—	4	—	2	—	16	32	8	—	9	—
Sub-Group IV.	Syphilis, Primary	1317	—	1859	—	1954	—	2739	—	485	—	1457
	Secondary	840	—	920	—	747	20	943	32	1032	—	343
	Gonorrhoea	1861	—	2515	—	2534	—	2500	—	2148	—	2521
Total	4018	—	5194	—	6236	20	6182	32	3064	—	4321	—
Sub-Group V.—Hydrophobia, &c.	—	—	4	40	2	20	3	—	—	—	—	—
<b>GROUP "B."</b>												
Sub-Group I.—Parasitic Diseases	46	—	64	—	6	—	13	—	—	—	—	—
Sub-Group II.	Scurvy	—	—	—	2	—	—	—	—	—	—	—
	Alcoholism	60	36	104	40	35	—	32	31	—	40	—
<b>GROUP "C."</b>												
Debility, &c.	242	—	116	—	219	—	89	—	254	—	192	—
<b>GROUP "D."</b>												
Rheumatism	320	—	240	—	331	—	392	—	162	—	315	—
Tubercular Diseases	21	71	48	120	39	102	19	—	38	—	36	—
Other Diseases	64	—	132	—	116	—	73	—	54	—	120	—
<b>II.—LOCAL DISEASES.</b>												
<b>Diseases of the—</b>												
1. Nervous System { Nervous Diseases	82	36	64	40	63	—	80	32	85	77	80	—
2. Eye { Mental	4	—	32	—	35	—	25	—	23	—	31	—
3. & 4. Other Organs of Special Senses	103	—	100	—	214	—	111	—	169	—	94	—
5. Circulatory System	199	—	384	—	216	—	115	—	223	—	339	—
6. Respiratory	53	—	84	—	141	—	73	—	115	—	71	—
7. Digestive	288	142	328	40	208	20	248	—	192	—	330	—
8. Lymphatic and Glandular System	1246	142	1579	40	1017	184	1468	127	1055	308	1318	287
9. Urinary System	206	36	452	—	204	—	360	—	600	—	437	—
10. Generative	21	—	20	—	14	—	13	—	31	—	13	—
11. Organs of Locomotion	552	—	1843	—	363	—	274	—	2333	—	1220	—
12. Connective Tissue	82	—	92	—	116	—	105	—	85	77	71	—
13. Skin	174	—	272	—	243	—	159	—	131	77	223	—
	740	—	1343	—	1229	—	593	—	585	—	713	—
<b>III.—POISONS</b>												
	4	—	—	—	—	20	3	—	8	—	4	—
<b>IV.—INJURIES.</b>												
1. General	21	71	88	320	4	123	3	—	—	77	9	—
2. Local	772	107	1251	40	1158	81	592	96	585	—	1007	46
3. In Action	—	—	—	—	—	—	—	—	—	—	—	—
No appreciable disease	11	—	48	—	20	—	6	—	38	—	13	—
Cause unknown (refers to deaths only)	—	—	—	—	—	—	—	—	—	—	—	—
General Total	13012	1388	18361	929	12912	980	12966	790	14873	1001	15483	1737

of Mean Strength.

Meerut.		Sirhind.		Lahore.		Rawal Pindi.		Peshawar.		Quetta.		Marching.		Total.	
4,055		4,356		4,814		6,408		2,715		2,098		1,663		43,001	
Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
—	—	2	—	21	12	16	4	—	—	6	—	—	—	3	05
5	—	5	—	—	—	—	—	—	—	—	—	—	—	3	—
26'9	6'41	37'9	9'64	16'8	6'02	31'1	8'74	28'0	12'52	8'1	2'38	13'8	7'2	25'0	6'42
15'5	—	24'1	—	30'7	—	33'1	—	—	—	5	—	—	—	20'3	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	9	23	6	62	—	—	—	—	—	—	—	—	—	—
25'2	99	20'0	23	26'0	1'04	15'4	47	5'9	—	12'9	95	23'5	—	22'3	12
2	—	5	—	—	—	—	—	4	—	—	—	—	—	2	40
68'6	7'40	84'0	10'10	74'2	7'89	80'8	9'36	34'6	12'52	22'4	3'34	45'1	—	68'7	7'07
61'4	—	146'7	46	780'2	1'04	343'5	47	1001'3	7'00	1188'8	2'38	134'1	—	422'9	9'93
1'7	25	1'1	23	1'7	—	3'0	16	2'9	—	4'8	—	1'2	—	1'7	06
36'0	—	113'4	—	99'9	—	66'9	—	30'2	—	81'5	—	92'6	—	116'3	—
34'0	—	53'9	—	55'3	21	32'9	—	18'8	—	45'3	—	24'7	—	54'7	07
168'7	—	147'8	—	187'8	—	176'0	—	76'6	—	94'4	—	147'9	—	186'9	—
238'7	—	315'2	—	343'0	21	276'9	—	125'6	—	221'2	—	265'2	—	357'8	07
—	—	—	—	—	—	—	—	—	—	5	48	—	—	1	07
2'2	—	6'7	—	5'2	—	3'7	—	5'5	—	1'4	—	6	—	3'3	—
7	—	—	—	2'1	—	2	—	—	—	—	—	—	—	3	—
2'0	—	2'5	—	2'7	21	5'9	16	2'2	—	6'7	—	1'2	—	4'1	06
14'8	25	20'2	—	60'9	—	12'6	—	7'7	—	6'7	—	2'4	—	20'2	02
19'2	—	31'9	—	44'0	—	25'6	—	9'9	—	36'7	48	18'0	—	29'2	02
2'2	25	2'8	69	3'5	62	2'0	47	1'8	74	4'3	48	6	1'20	2'8	03
8'4	—	10'1	23	11'0	—	6'9	31	5'2	—	12'4	48	3'0	60	9'0	12
8'9	74	5'7	—	6'9	83	10'8	16	2'2	—	6'2	95	3'0	—	7'2	33
1'0	—	1'1	—	8	—	8	—	7	—	1'9	—	—	—	1'6	—
9'4	—	10'3	—	12'0	—	8'4	—	9'6	—	16'7	—	5'4	—	11'7	—
17'0	—	6'7	—	16'0	21	11'4	—	8'1	—	15'3	—	4'8	—	16'5	02
6'2	40	8'5	23	15'2	21	7'0	—	4'4	—	9'5	48	3'0	1'20	8'7	16
23'2	25	32'1	23	61'9	27'0	38'1	1'25	37'9	1'10	138'7	8'10	14'4	60	38'0	1'16
97'4	1'44	133'4	23	149'4	2'20	108'9	1'25	67'0	2'58	172'1	9'05	54'7	—	120'1	1'47
38'9	—	30'5	23	29'3	—	26'1	—	13'6	—	15'7	—	28'9	—	29'6	05
1'5	—	6	—	1'2	21	1'1	31	2'2	—	37	1'9	—	—	1'4	12
197'3	—	44'3	—	106'4	—	175'1	—	87'3	—	63'9	—	95'0	—	107'3	—
8'4	—	11'0	—	9'1	—	11'4	—	4'8	—	37	10'0	7'2	—	9'5	05
22'9	—	26'2	—	18'5	—	19'7	—	25'0	—	15'7	—	24'1	—	21'3	02
36'7	—	56'1	—	96'0	—	59'1	—	51'2	—	48'1	—	29'5	—	73'6	—
2	—	2	23	4	42	5	16	4	37	1'4	—	6	—	4	14
2'2	74	1'1	—	6'9	1'87	2'2	31	4'8	1'47	3'3	48	1'8	1'80	2'7	91
104'1	1'73	119'1	23	90'8	62	97'8	78	88'0	1'10	111'1	2'86	63'1	60	96'9	86
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2'7	—	9	—	1'9	—	2'3	—	4	—	1'4	—	6	—	1'8	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1417'0	13'56	1108'1	13'06	1951'0	19'32	1340'8	15'14	1694'7	27'62	2138'7	21'45	807'6	6'01	1468'4	14'40

ABSTRACT No. XVII.—TABLE, taken from the REPORT of the PRINCIPAL MEDICAL OFFICER, showing the ADMISSIONS and DEATHS which took place at the CHIEF STATIONS in the BENGAL COMMAND during the year 1893.

Districts.	Stations.	Average Annual Strength.	Admitted into Hospital.	Died in the Command.	Ratio per 1,000 of Strength.		Ratio per 1,000 of Strength, 1883 to 1892.	
					Admissions.	Deaths.	Admissions.	Deaths.
PRESIDENCY	Fort William	1,172	1,272	5	1085·3	4·27	1455·1	12·95
	Dum-Dum	756	1,311	21	1734·1	27·78	1592·1	12·61
	Barrackpore	564	717	6	1969·8	16·48	1839·3	12·83
	Darjeeling	412	413	6	1002·4	14·56	1169·2	15·70
	Gnathong	106	112	1	1056·6	9·43	*1285·7	13·61
ALLAHABAD	Allahabad	1,082	1,564	10	1515·5	9·69	1752·8	23·26
	Fort Allahabad	203	307	2	1512·3	14·78	1619·1	14·36
	Dinapore	886	1,722	6	1943·6	6·77	1630·0	20·05
	Benares	380	990	4	2628·9	10·53	1584·1	23·67
OUDH	Lucknow	2,643	3,579	24	1354·1	9·08	1332·5	15·57
	Military Prison	47	75	—	1595·7	—	1390·2	8·87
	Cawnpore	782	846	12	1081·8	15·35	1519·1	20·90
	Sitapur	336	457	2	1360·1	5·95	1287·4	13·72
	Pyzabad	870	1,051	9	1208·0	10·34	1543·1	10·43
	Fatehgarh	219	315	1	1438·4	4·57	1697·1	18·16
ROHILKHAND	Bareilly	1,199	1,368	8	1301·2	6·67	1354·3	18·14
	Moradabad	58	118	—	2034·5	—	1779·9	16·99
	Shahjahanpur	401	653	7	1628·4	17·46	1717·1	12·64
	Ranikhet	974	1,159	5	1189·9	5·13	1198·6	12·74
	Chaubattia	311	323	1	1054·7	3·22	1434·5	14·32
	Naini Tal	197	145	4	736·0	20·30	1616·7	19·24
NARBUDDA	Jubbulpore	819	1,201	9	1466·4	10·99	1509·6	16·20
	Saugor	370	528	3	1427·0	8·11	1826·7	8·65
	Pachmarhi	110	138	1	1254·5	9·09	1711·8	16·55
BUNDELKHAND	Arra	1,127	1,893	24	1599·8	21·30	1570·4	14·64
	Jhansi	682	986	12	1445·7	17·60	2038·2	23·57
	Sipri	75	102	1	1360·0	13·33	†1956·9	16·80
	Nowgong	361	585	2	1620·5	5·54	1898·4	12·08
	Meerut	2,202	3,267	38	1483·7	17·26	1782·7	15·92
MEERUT	Muttra	41	71	—	1731·7	—	1734·9	19·59
	Delhi	316	638	4	2019·0	12·66	2063·5	20·87
	Roorkee	346	338	4	976·9	11·56	1590·6	18·15
	Chakrata	991	1,196	8	1206·9	8·07	1210·2	11·96
	Landour	159	236	1	1484·3	6·29	1634·7	21·02
	Umballa	2,182	2,557	30	1171·9	13·75	1236·4	12·28
SIRHIND	Subathn	485	481	7	901·8	14·43	1248·2	13·92
	Dagshai	852	869	10	1020·0	11·74	1113·3	10·09
	Jutogh	242	245	1	1012·4	4·13	1252·6	9·24
	Solon	221	189	4	855·2	18·10	977·0	6·77
	Kasauli	374	486	5	1209·5	13·37	1653·7	14·75
	Mian Mir	933	2,039	22	2185·4	23·58	2496·6	23·81
LAHORE	Fort Lahore	104	345	2	3317·3	19·23	2005·2	44·62
	Ferozepore	1,052	1,830	15	1739·5	14·26	1743·0	14·34
	Jullundur	667	1,173	20	1758·6	20·99	1407·9	15·30
	Multan	925	1,595	10	1724·3	10·81	1638·0	13·57
	Amritsar	256	896	4	3500·0	15·63	2345·6	18·02
	Bhagsu	72	96	1	1333·3	13·89	1158·8	11·35
	Dalhousie	805	1,418	19	1761·5	23·60	1455·5	12·61

\* 3 years (1890-92).

† 7 years (1886-92).

Districts.	Stations.	Average Annual Strength.	Admitted into Hospital.	Died in the Command.	Ratio per 1,000 of Strength.		Ratio per 1,000 of Strength, 1882 to 1891.	
					Admissions.	Deaths.	Admissions.	Deaths.
RAWAL PINDI	Rawal Pindi -	2,988	3,823	45	1275·2	15·01	1390·3	16·99
	Fort Attock -	122	302	2	2475·4	16·39	2645·7	23·38
	Sialkot -	1,034	1,850	19	1789·2	18·38	1617·7	15·00
	Campbellpore -	257	394	4	1533·1	15·56	1612·0	15·24
	Murree -	214	313	8	1462·6	37·38	1411·0	33·14
	Khyra Gali -	68	81	—	1191·2	—	1229·4	9·69
	Bara Gali -	46	52	—	1130·4	—	*1182·5	7·50
	Kalabagh -	47	46	2	978·7	42·55	1333·3	9·80
	Kuldana -	508	511	5	1005·9	9·84	1155·1	4·26
	Camp Gharial -	544	642	2	1180·1	3·68	895·2	12·66
	„ Thobba -	449	431	9	959·9	20·04	†1354·7	6·86
	„ Topa -	121	147	1	1214·9	8·26	†1095·8	8·18
PESHAWAR	Peshawar -	1,636	2,785	45	1702·3	27·51	1910·1	19·87
	Nowshera -	606	1,237	11	2041·3	18·15	1549·5	11·49
	Cherat -	473	579	19	1224·1	40·17	1296·8	15·11
QUETTA	Quetta -	2,008	4,487	45	2138·7	21·45	§1305·9	11·44
MARCHING	Troops on the march	1,663	1,343	10	807·6	6·01	746·7	6·29

\* 9 years (1883-90 and 1892).  
 † 9 years (1884-92).

‡ 8 years (1884 and 1886-92).  
 § 7 years (1886-92).

**ABSTRACT No. XVIII.—TABLE, taken from the REPORT of the PRINCIPAL MEDICAL OFFICER, showing the STATIONS in the BENGAL COMMAND at which the ADMISSIONS and DEATHS from ENTERIC FEVER took place in each of the four quarters of the year 1893.**

Districts.	Stations.	1st Quarter.		2nd Quarter.		3rd Quarter.		4th Quarter.		Total.	
		Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.
Presidency	Fort William	3	1	1	1	—	—	—	—	4	2
	Dum Dum -	2	1	4	4	4	2	1	1	11	8
	Barrackpore -	2	2	—	—	3	—	4	—	9	2
	Darjeeling -	—	—	—	—	—	—	—	—	—	—
	Gnathong -	—	—	—	—	—	—	—	—	—	—
Allahabad	Allahabad -	—	2	4	1	8	—	9	—	21	3
	Fort Allahabad	—	—	1	—	—	—	—	—	1	—
	Dinapore -	3	—	7	1	4	—	5	—	19	1
	Benares -	—	—	6	1	—	—	3	—	9	1
Oudh	Lucknow -	6	1	17	4	16	1	34	5	73	11
	„ Military Prison	—	—	—	—	—	—	—	—	—	—
	Cawnpore -	—	—	1	1	5	1	3	1	9	3
	Sitapur -	13	2	—	—	—	—	—	—	13	2
	Fyzabad -	—	—	11	1	4	—	8	3	23	4
	Fatehgarh -	—	—	—	—	—	—	—	—	—	—
Rohilkhand	Bareilly -	—	—	5	—	5	—	16	4	26	4
	Moradabad -	—	—	—	—	—	—	—	—	—	—
	Shahjahanpur	2	1	5	1	7	3	12	1	26	6
	Ranikhet -	1	—	19	1	7	1	—	—	27	2
	Chaubattia -	—	—	7	1	—	—	—	—	7	1
	Naini Tal -	—	—	1	—	2	—	—	1	3	1

Districts.	Stations.	1st Quarter.		2nd Quarter.		3rd Quarter.		4th Quarter.		Total.	
		Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.
Narbudda	Jubbulpore -	8	—	14	2	8	2	2	1	32	5
	Saugor -	—	—	2	—	—	—	3	—	5	—
	Pachmarhi -	—	—	—	—	—	—	—	—	—	—
Bundelkhand	Agra -	6	—	13	7	22	7	7	—	48	14
	Jhansi -	3	2	2	1	22	7	1	1	28	11
	Sipri -	—	—	—	—	3	—	—	1	3	1
	Nowgong -	—	—	—	—	7	2	2	—	9	2
Meerut	Meerut -	—	—	39	13	8	4	34	2	81	19
	Muttra -	—	—	—	—	—	—	2	—	2	—
	Delhi -	—	—	2	—	2	1	—	1	4	2
	Roorkee -	—	—	4	—	3	1	—	—	7	1
	Chakrata -	—	—	9	2	5	1	—	—	14	3
	Landour -	—	—	1	—	—	—	—	1	1	1
Sirhind	Umballa -	1	1	32	11	23	6	22	5	78	23
	Subathu -	—	—	4	2	9	2	1	—	14	4
	Dagshai -	—	—	15	3	33	5	6	1	54	9
	Jutogh -	—	—	1	—	1	1	—	—	2	1
	Solon -	—	—	9	3	4	—	—	1	13	4
	Kasauli -	1	—	1	—	1	—	1	1	4	1
Lahore -	Mian Mir -	—	—	3	2	1	1	—	—	4	3
	Fort Lahore -	—	—	1	1	—	—	—	—	1	1
	Ferozepore -	—	—	5	1	7	3	2	1	14	5
	Jullundur -	1	—	20	7	8	3	4	2	33	12
	Multan -	1	1	5	1	1	—	—	—	7	2
	Amritsar -	—	—	3	—	—	—	—	—	3	—
	Bhagsu -	—	—	1	—	—	—	—	—	1	—
	Dalhousie -	—	—	7	1	8	2	3	3	18	6

Districts.	Stations.	1st Quarter.		2nd Quarter.		3rd Quarter.		4th Quarter.		Total.	
		Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.
Rawal Pindi	Rawal Pindi -	10	1	36	13	36	9	12	7	94	29
	Fort Attock -	—	—	—	—	—	—	—	—	—	—
	Sialkot -	1	—	44	8	4	2	2	—	51	10
	Campbellpore	—	—	13	1	4	—	2	2	19	3
	Murree -	—	—	8	4	1	—	—	—	9	4
	Khyra Gali -	—	—	—	—	—	—	—	—	—	—
	Bara Gali -	—	—	1	—	—	—	—	—	1	—
	Kalabagh -	—	—	2	2	—	—	—	—	2	2
	Kuldana -	—	—	3	2	—	—	—	—	3	2
	Camp Gharial	—	—	3	—	—	—	—	—	3	—
	„ Thobba	—	—	6	2	2	3	—	—	8	5
	„ Topa -	—	—	8	1	1	—	—	—	9	1
Peshawar	Peshawar -	—	—	9	7	14	6	1	—	24	13
	Nowshera -	—	—	16	7	—	1	—	—	16	8
	Cherat -	—	—	14	7	19	5	3	1	36	13
Quetta	Quetta -	5	—	—	1	4	2	8	2	17	5
Marching	Troops on the March.	4	—	2	—	—	—	17	—	23	—
Total -		73	15	447	128	326	84	230	49	1076	276

**ABSTRACT No. XIX.—TABLE, taken from the REPORT of the PRINCIPAL MEDICAL OFFICER, showing the STATIONS in the BENGAL COMMAND at which the ADMISSIONS and DEATHS from CHOLERA took place in each of the four quarters of the year 1893.**

Districts.	Stations.	1st Quarter.		2nd Quarter.		3rd Quarter.		4th Quarter.		Total.	
		Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.
Presidency	Dum Dum	—	—	1	1	—	—	—	—	1	1
Meerut	Meerut	—	—	1	—	—	—	—	—	1	—
Srhind	Umballa	—	—	4	1	—	—	—	—	4	1
Lahore	Mian Mir	—	—	3	3	—	—	—	—	3	3
	Total	—	—	9	5	—	—	—	—	9	5



ABSTRACT No. XX.—TABLE, taken from the REPORT of the PRINCIPAL MEDICAL OFFICER, showing the PREVALENCE of DYSENTERY, DIARRHOEA, and HEPATIC DISEASES (Congestion, Inflammation, and Abscess of Liver) in each of the DISTRICTS in the BENGAL COMMAND during the Year 1893.

Districts	Pre-sidency.	Allahabad.	Oudh.	Rohilkhand.	Narbudda.	Bundelkhand.	Meerut.	Sirhind.	Lahore.	Rawal Pindi.	Peshawar.	Quetta.	Marching.	Total.														
Strength.	2,810	2,501	4,897	3,140	1,249	2,245	4,055	4,356	4,814	6,408	2,715	2,698	1,683	43,001														
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.														
	112	3	83	1	34	—	47	—	102	4	87	1	125	5	99	3	16	—	27	2	30	—	961	21				
	104	—	94	—	24	—	60	—	103	—	171	—	190	—	158	—	33	—	51	—	15	—	1,186	—				
	65	3	93	1	18	2	48	5	33	2	51	—	122	8	67	7	21	6	30	2	13	—	749	43				
	281	6	270	2	76	2	155	5	288	6	309	1	437	13	324	10	70	6	108	4	67	—	2,896	64				
Ratio per 1,000 of Mean Strength.																												
Dysentery	39.0	1.07	33.2	.40	19.4	.20	30.3	.32	26.2	—	20.9	—	25.2	.96	20.0	.23	26.0	1.04	15.4	.47	5.9	—	12.9	.95	23.5	—	22.3	.49
Diarrhoea	37.0	—	37.6	—	14.9	—	35.0	—	18.5	—	26.7	—	25.4	—	39.5	—	39.5	—	24.7	—	12.2	—	24.3	—	9.0	—	27.6	—
Hepatic Diseases	23.1	1.07	37.2	.40	18.0	1.23	31.8	.32	13.9	1.54	21.4	2.23	8.1	.49	11.7	—	25.3	1.66	10.5	1.00	7.7	2.21	14.3	.95	7.8	—	17.4	1.00
Total	100.0	2.14	108.0	.80	52.3	1.43	97.1	.64	58.5	1.54	69.0	2.23	58.7	1.48	70.9	.23	90.8	2.70	50.6	1.56	25.8	2.21	51.5	1.91	40.3	—	67.3	1.49

ABSTRACT No. XXI.—TABLE, taken from the REPORT of the PRINCIPAL MEDICAL OFFICER, showing the PREVALENCE and MORTALITY in the Cantonments of the BENGAL COMMAND, due to DYSENTERY, DIARRHŒA, and HEPATIC DISEASES (Congestion, Inflammation, and Abscess of the Liver) in each Quarter of the Year 1893.

	Strength.	Dysentery.				Diarrhœa.				Hepatic Diseases.				Total.			
		Number.		Ratio per 1,000 of Strength.		Number.		Ratio per 1,000 of Strength.		Number.		Ratio per 1,000 of Strength.		Number.		Ratio per 1,000 of Strength.	
		Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
1st Quarter	- 42,319	116	5	2.7	.12	160	—	3.8	—	137	5	3.2	.12	413	10	9.8	.24
2nd "	- 43,376	281	7	6.5	.16	383	—	8.8	—	211	8	4.9	.18	875	15	20.2	.35
3rd "	- 43,644	282	3	6.5	.07	392	—	9.0	—	266	17	6.1	.39	940	20	21.5	.46
4th "	- 42,685	283	6	6.6	.14	251	—	5.9	—	135	13	3.2	.30	668	19	15.6	.45
Total	- 43,006	961	21	22.3	.49	1,186	—	27.6	—	749	43	17.4	1.00	2,896	64	67.3	1.49





**ABSTRACT No. XXIII.—TABLE, taken from the REPORT of the PRINCIPAL MEDICAL in each of the MILITARY DISTRICTS in the MADRAS**

Military Districts.		Madras District.	South-eastern District.	Bangalore and Belgaum Districts.	Secunderabad District.	Rangoon District.	Mandalay District.	Depôts.	On the March.	Total.	
Average Strength - - -		1,087	1,157	3,615	3,064	2,137	1,723	503	63	13,346	
Diseases.		Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
<b>I.—GENERAL DISEASES.</b>											
Sub-Group I.	GROUP "A."										
	Small-pox . . . . .	1	—	1	—	—	—	—	—	—	—
	Other Eruptive Fevers . . . . .	38	8	4	3	38	5	48	10	17	6
	Enteric Fever . . . . .	175	—	30	—	107	—	196	—	144	—
	Other Continued Fevers . . . . .	—	—	—	—	—	—	—	—	18	5
	Yellow Fever . . . . .	—	—	—	—	—	—	—	—	1	1
	Cholera . . . . .	23	—	17	—	83	1	144	2	125	4
Sub-Group IV.	Dysentery . . . . .	—	—	—	—	—	—	—	—	42	1
	Other Diseases . . . . .	—	—	—	—	20	—	—	—	44	2
Total . . . . .		237	8	52	3	250	6	388	18	286	10
Sub-Group II.—Malarial Fevers . . . . .		16	—	23	—	340	—	301	—	410	1
Sub-Group III.—Septic Diseases . . . . .		1	—	1	—	—	—	1	—	—	—
Sub-Group IV.	{ Syphilis, Primary . . . . . Secondary . . . . . Gonorrhœa . . . . .	176	—	200	—	601	—	455	—	335	—
		130	—	60	—	377	—	188	—	190	—
		221	—	180	—	637	—	475	—	357	—
Total . . . . .		527	—	440	—	1,620	—	1,118	—	882	—
Sub-Group V.—Hydrophobia, &c. . . . .		—	—	—	—	—	—	—	—	—	—
<b>GROUP "B."</b>											
Sub-Group I.—Parasitic Diseases . . . . .		12	—	1	—	14	—	9	—	9	—
Sub-Group II. { Scurvy . . . . . Alcoholism . . . . .		2	—	25	—	23	1	20	—	13	—
GROUP "C."											
Debility, &c. . . . .		79	—	2	—	34	—	27	—	65	—
<b>GROUP "D."</b>											
Rheumatism . . . . .		46	—	26	—	88	1	90	—	101	—
Tubercular Diseases . . . . .		5	1	3	2	6	1	3	—	21	3
Other Diseases . . . . .		8	—	18	—	24	—	36	1	100	—
<b>II.—LOCAL DISEASES.</b>											
Diseases of the—											
1. Nervous { Nervous Diseases . . . . .		14	—	13	1	36	—	19	—	30	1
System (Mental . . . . .		3	—	2	—	2	—	4	1	8	—
2. Eye . . . . .		19	—	14	—	41	—	30	—	20	—
3 & 4. Other Organs of Special Senses . . . . .		25	—	21	—	39	—	35	—	37	—
5. Circulatory System . . . . .		17	—	3	—	14	1	17	—	22	1
6. Respiratory . . . . .		29	—	27	—	33	2	61	—	44	3
7. Digestive . . . . .		120	2	92	—	356	5	246	3	229	6
8. Lymphatic and Glandular System . . . . .		68	—	35	—	126	—	50	—	76	—
9. Urinary System . . . . .		2	—	1	—	6	—	5	—	1	—
10. Generative . . . . .		174	—	48	—	281	—	195	—	179	—
11. Organs of Locomotion . . . . .		6	—	11	—	34	—	13	—	16	—
12. Connective Tissues . . . . .		23	—	46	—	75	—	44	—	53	—
13. Skin . . . . .		115	—	95	—	168	—	156	—	152	—
III.—POISONS . . . . .		1	—	—	—	1	—	1	—	2	—
IV.—INJURIES.											
1. General . . . . .		2	—	2	—	3	1	1	4	3	2
2. Local . . . . .		108	1	190	1	339	4	315	2	202	—
3. In Action . . . . .		—	—	—	—	—	—	—	—	—	—
No appreciable disease . . . . .		3	—	5	—	5	—	6	—	8	—
Cause unknown (refers to deaths only).		—	—	—	—	—	—	—	—	—	—
General Total . . . . .		1,662	12	1,200	9	4,014	22	3,191	29	2,960	27

OFFICER, showing the PREVALENCE and MORTALITY of the different Classes of DISEASES  
COMMAND, for the Year 1892, with the Ratios per 1,000 of the Strength.

Madras District.	Southern District.	Bangalore and Belgaum Districts.	Secunderabad District.	Rangoon District.	Mandalay District.	Depôts.	On the March.	Total.
Ratio per 1,000 of Mean Strength.								
Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.
—	—	—	—	—	—	—	—	—
35'0	7'36	3'5	2'59	10'5	1'38	15'7	5'22	7'9
161'0	—	25'9	—	29'6	—	64'0	—	67'4
—	—	—	—	—	—	—	—	—
21'2	—	14'7	—	23'0	28	47'0	65	58'5
—	—	—	—	5'5	—	—	—	1'87
218'1	7'36	44'9	2'59	69'2	1'66	126'7	5'87	133'8
—	—	—	—	—	—	—	—	4'68
14'7	—	19'9	—	95'7	—	98'2	—	191'8
—	—	—	—	—	—	—	—	47
9	—	8	—	—	—	3	—	—
161'9	—	172'9	—	167'6	—	148'5	—	156'8
119'9	—	51'9	—	104'3	—	61'4	—	88'9
203'3	—	155'6	—	176'2	—	135'6	—	167'1
—	—	—	—	—	—	—	—	—
481'8	—	380'4	—	448'1	—	364'9	—	412'8
—	—	—	—	—	—	—	—	440'5
—	—	—	—	—	—	—	—	—
11'0	—	8	—	3'9	—	2'9	—	4'2
1'8	—	21'6	—	6'4	28	6'5	—	6'1
72'7	—	1'7	—	9'4	—	8'8	—	30'4
—	—	—	—	—	—	—	—	29'6
42'3	—	22'5	—	24'3	28	29'4	—	47'3
4'6	1'92	2'6	1'73	1'6	28	1'0	—	9'8
7'4	—	15'6	—	6'6	—	11'7	33	46'8
—	—	—	—	—	—	—	—	—
12'9	—	11'2	86	10'0	—	6'2	—	14'0
2'8	—	1'7	—	6	—	1'3	33	3'7
17'5	—	12'1	—	11'3	—	9'8	—	9'4
23'0	—	18'2	—	10'8	—	11'4	—	17'3
15'6	—	2'6	—	3'9	28	5'6	—	10'3
26'6	—	23'8	—	23'0	55	19'9	—	30'6
110'4	1'84	70'5	—	98'5	1'38	80'2	98	107'2
62'6	—	30'8	—	34'9	—	16'3	—	35'6
—	—	—	—	—	—	—	—	—
1'8	—	8	—	1'6	—	1'7	—	5
160'1	—	41'5	—	77'7	—	63'6	—	83'8
5'5	—	9'5	—	9'4	—	4'3	—	7'5
21'2	—	39'8	—	20'7	—	14'4	—	24'8
105'8	—	82'1	—	46'5	—	50'9	—	71'1
9	—	—	—	3	—	3	—	9
1'8	—	—	1'73	8	28	3	1'30	1'4
99'4	92	169'4	86	93'8	1'10	102'8	65	94'5
2'8	—	4'3	—	1'4	—	2'0	—	3'7
—	—	—	—	—	—	—	—	—
1529'0	11'04	1037'1	7'78	1110'4	6'09	1041'4	9'46	1389'3
—	—	—	—	—	—	—	—	12'63
—	—	—	—	—	—	—	—	1673'4
—	—	—	—	—	—	—	—	12'19
—	—	—	—	—	—	—	—	1306'2
—	—	—	—	—	—	—	—	5'97
—	—	—	—	—	—	—	—	714'3
—	—	—	—	—	—	—	—	31'74
—	—	—	—	—	—	—	—	1232'2
—	—	—	—	—	—	—	—	9'36

ABSTRACT No. XXIV.—TABLE, taken from the REPORT of the PRINCIPAL MEDICAL OFFICER, showing the AVERAGE STRENGTH, AVERAGE CONSTANTLY SICK, ADMISSIONS, DEATHS, and INVALIDS at the different STATIONS and DISTRICTS in the MADRAS COMMAND, for the Year 1893.

Districts.	Stations.	Ratio per 1,000 of Strength.											
		Average Strength.	Average constantly Sick.	Admitted.	Died in and out of Hospital.	Invalids.	Average constantly Sick.	Admitted.	Died in and out of Hospital.	Invalids.	Average of previous Period of 10 Years.		
											Admitted.	Died.	
Madras District	Madras and Pallavaram.	752	76	1,175	10	32	101·06	1502·5	13·29	42·55	1306·8	16·34	
	St. Thomas' Mount	335	31	487	2	16	92·53	1453·7	5·97	47·76	1459·2	11·79	
	Total	1,087	107	1,662	12	48	98·43	1529·0	11·04	44·16	—	—	
Southern District	Wellington Regiment.	793	52	757	1	12	65·41	952·2	1·26	15·09	1014·3*	5·92	
	Cannanore	106	8	172	1	—	75·47	1622·6	9·43	—	1091·2	7·93	
	Calicut	103	6	95	5	—	58·25	922·3	48·54	—	1220·5	7·80	
	Malapuram	153	11	176	2	—	71·89	1150·3	13·07	—	1333·8	12·34	
	Total	1,157	77	1,200	9	12	66·55	1037·1	7·78	10·37	—	—	
Belgaum and Bangalore Districts	Bangalore	2,064	194	2,507	11	41	93·99	1214·6	5·33	19·86	1092·5	7·97	
	Bellary	520	33	539	7	9	63·46	1036·5	13·46	17·31	1393·2	8·10	
	Belgaum	990	60	922	4	18	69·69	931·3	4·04	18·18	1014·8†	5·27	
	Ramandroog	41	1	46	—	—	24·39	1121·9	—	—	814·2‡	—	
	Total	3,615	297	4,014	22	68	82·16	1110·4	6·09	18·81	—	—	
Secunderabad District	Secunderabad	3,064	222	3,191	29	61	72·45	1041·4	9·46	19·91	1106·2	12·95	
Rangoon District	Rangoon	933	106	1,272	17	42	113·16	1363·3	18·22	45·01	1361·1	14·69	
	Meiktila	390	38	647	4	—	97·44	1658·9	10·26	—	1616·1	15·89	
	Port Blair	146	6	161	—	—	41·00	1102·7	—	—	962·3	9·96	
	Thayetmyo	668	50	889	6	22	74·85	1330·8	8·98	32·93	1463·2	13·97	
	Total	2,137	200	2,969	27	64	95·59	1389·3	12·63	29·95	—	—	

\* Six years 1887 to 1892.

† Eight years, 1885 to 1892.

‡ Five years, 1885-6 to 1890-92.

ABSTRACT No. XXIV.—*continued.*

Districts.	Stations.		Average Strength.	Average constantly Sick.	Admitted.	Died in and out of Hospital.	Invalided.	Ratio per 1,000 of Strength.					
								Average constantly Sick.	Admitted.	Died in and out of Hospital.	Invalided.	Average of previous period of 10 Years.	
												Admitted.	Died.
Mandalay District	Mandalay -	-	851	107	1,501	11	31	125·73	1763·8	12·92	36·43	1906·3*	24·91
	Bhamo -	-	271	18	387	3	3	66·42	1428·0	11·07	11·07	2603·3*	29·43
	Shwebo -	-	408	33	564	5	11	80·88	1382·3	12·25	26·06	1655·7*	13·31
	Bernardmyo -	-	193	14	259	2	3	72·54	1341·9	10·36	15·54	1238·1*	21·87
	Total	-	1,723	172	2,711	21	48	99·82	1673·4	12·19	27·86	—	—
Depots	Poonamallee	-	115	22	173	1	28	191·30	1504·3	8·69	243·48	2238·7	44·43
	Wellington	-	388	37	484	2	21	95·36	1247·4	5·15	54·12	1271·4	10·00
	Total	-	503	59	657	3	49	117·29	1306·2	5·97	97·41	—	—
Marching	On the March	-	63	—	45	2	—	—	714·3	31·74	—	1337·7	50·59

\* Five years, 1888 to 1892.



ABSTRACT No. XXV.—TABLE, taken from the REPORT of the PRINCIPAL MEDICAL OFFICER, showing the STATIONS in the MADRAS COMMAND at which the ADMISSIONS and DEATHS from ENTERIC FEVER took place in each of the four quarters of the Year 1893.

Districts.	Stations.	1st Quarter.		2nd Quarter.		3rd Quarter.		4th Quarter.		Total.	
		Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Madras District {	Madras -	4	—	—	—	83	8	—	—	37	8
	Pallaveram -	—	—	—	—	1	—	—	—	1	—
Southern District - {	Wellington -	—	—	1	—	—	1	—	—	1	1
	Calicut -	—	—	—	—	3	2	—	—	3	2
	Malapuram -	1	—	—	1	—	—	—	—	1	1
Belgaum and Bangalore Districts - {	Bangalore -	7	1	12	1	14	2	3	1	36	5
	Belgaum -	1	—	1	—	—	—	—	—	2	—
Secunderabad District.	Secunderabad	13	8	6	1	18	4	11	3	48	16
Rangoon District - {	Rangoon -	—	—	5	1	2	2	6	1	13	4
	Thayetmyo -	—	—	1	—	1	1	—	—	2	1
	Meiktila -	—	1	1	—	1	—	—	—	2	1
Mandalay District - {	Mandalay -	—	—	3	1	3	3	—	—	6	4
	Bhamo -	1	—	—	1	—	—	—	—	1	1
Total -		27	10	30	6	76	23	20	5	153	44

**ABSTRACT No. XXVI.—TABLE, taken from the REPORT of the PRINCIPAL MEDICAL OFFICER, showing the STATIONS in the MADRAS COMMAND at which the ADMISSIONS and DEATHS from CHOLERA took place in each of the four quarters of the Year 1893.**

Districts.	Stations.	1st Quarter.		2nd Quarter.		3rd Quarter.		4th Quarter.		Total.	
		Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Mandalay District - Dis- }	Mandalay -	—	—	—	—	1	1	—	—	1	1

ABSTRACT No. XXVII.—TABLE, taken from the REPORT of the PRINCIPAL MEDICAL OFFICER, showing the prevalence of DYSENTERY, DIARRHOEA, and HEPATITIS in each of the DISTRICTS in the MADRAS COMMAND for 1893.

Districts.	Madras District.		Southern District.		Belgaum and Bangalore Districts.		Secunderabad District.		Rangoon District.		Mandalay District.		On the March.		Total.	
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Strength.	1,202		1,545		3,615		3,064		2,137		1,723		63		13,349	
Diseases.																
Dysentery -	42	—	42	—	83	1	144	2	125	4	42	1	—	—	478	8
Diarrhoea -	2	—	1	—	—	—	15	—	—	—	2	—	—	—	20	—
Hepatitis and Abscess of Liver -	14	—	—	—	22	5	28	2	13	6	18	1	—	1	95	15
Total -	58	—	43	—	105	6	187	4	138	10	62	2	—	1	593	23
Ratio per 1,000 of Strength.																
Dysentery -	34.9	—	27.2	—	23.0	.28	47.0	.65	58.5	1.87	24.4	.58	—	—	35.8	.60
Diarrhoea -	1.7	—	.6	—	—	—	4.9	—	—	—	1.1	—	—	—	1.5	—
Hepatitis and Abscess of Liver -	11.6	—	—	—	6.1	1.38	9.1	.65	6.1	2.81	10.4	.58	—	15.87	7.1	1.12
Total -	48.2	—	27.8	—	29.0	1.66	61.0	1.30	64.6	4.68	35.9	1.16	—	15.87	44.4	1.72

ABSTRACT No. XXVIII.—TABLE, taken from the REPORT of the PRINCIPAL MEDICAL OFFICER, showing the PREVALENCE and MORTALITY in the MADRAS COMMAND, due to DYSENTERY, DIARRHŒA, and HEPATITIS, in each Quarter of the Year 1893.

	Strength.	Dysentery.				Diarrhœa.				Hepatitis (including Abscess of Liver).				Total.			
		Number.		Ratio per 1,000 of Strength.		Number.		Ratio per 1,000 of Strength.		Number.		Ratio per 1,000 of Strength.		Number.		Ratio per 1,000 of Strength.	
		Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
1st Quarter	12,642	86	—	6.8	—	8	—	.6	—	33	6	2.6	.47	127	6	10.0	.47
2nd "	13,377	135	5	10.1	.37	4	—	.3	—	21	4	1.6	.29	160	9	12.0	.66
3rd "	13,559	154	3	11.4	.22	7	—	.5	—	25	1	1.8	.07	186	4	13.7	.29
4th "	13,814	108	—	7.4	—	1	—	.1	—	16	4	1.2	.29	120	4	8.7	.29
Total for the Year	13,349	478	8	35.8	.60	20	—	1.5	—	95	15	7.1	1.12	593	23	44.4	1.72

ABSTRACT No. XXIX.—TABLE showing the AVERAGE STRENGTH, ADMIS-  
among the TROOPS stationed in the BOMBAY COMMAND during the Year 1893,

Average Strength, 13,515.		Admissions into Hospital.	Deaths.			Invalids.		
Diseases.			In the Com- mand.	Of Invalids.	Total.	Number sent Home.	Number Dis- charged the Service.	Average Number constantly Sick.
I.--GENERAL DISEASES.								
GROUP "A."								
Sub-Group I.	Small-pox -	20	2	—	2	—	—	1'62
	Other Eruptive Fevers -	81	—	—	—	—	—	3'48
	Enteric Fever -	173	50	—	50	6	—	26'96
	Other Continued Fevers -	444	—	—	—	—	—	23'27
	Yellow Fever -	—	—	—	—	—	—	—
	Cholera -	6	4	—	4	—	—	1'13
	Dysentery -	269	7	—	7	3	—	13'66
	Other Diseases -	4	—	—	—	—	—	1'13
Total -		997	63	—	63	9	—	69'14
Sub-Group II.—Malarial Fevers -		6,059	4	3	7	40	4	173'08
Sub-Group III.—Septic Diseases -		14	—	—	—	—	1	58
Sub-Group IV.	Syphilis, Primary -	1,909	—	—	—	—	—	152'90
	Secondary -	821	1	—	1	29	5	67'74
	Gonorrhoea -	2,480	—	—	—	2	2	170'98
Total -		5,229	1	—	1	31	7	391'62
Sub-Group V.—Hydrophobia, &c. -		—	—	—	—	—	—	—
GROUP "B."								
Sub-Group I.—Parasitic Diseases -		24	—	—	—	—	—	1'63
Sub-Group II.	Scurvy -	5	—	—	—	—	—	8'
	Alcoholism -	47	2	—	2	—	—	1'36
GROUP "C."								
Debility, &c. -		423	—	—	—	56	10	20'79
GROUP "D."								
Rheumatism -		375	2	—	2	10	2	19'57
Tubercular Diseases -		46	6	1	7	10	8	6'83
Other Diseases -		95	2	—	2	6	4	6'48
II.—LOCAL DISEASES.								
Diseases of the—								
1. Nervous System { Nervous Diseases -		156	5	—	5	15	15	10'68
{ Mental " -		25	—	—	—	15	16	4'39
2. Eye -		180	—	—	—	7	7	12'05
3 & 4. Other Organs of Special Senses -		158	—	—	—	6	6	7'97
5. Circulatory System -		128	2	1	3	32	36	9'47
6. Respiratory " -		270	9	1	10	2	1	10'85
7. Digestive " -		1,263	15	2	17	26	7	49'65
8. Lymphatic and Glandular System -		291	—	—	—	2	1	34'08
9. Urinary System -		25	1	—	1	9	6	2'80
10. Generative " -		1,185	—	—	—	—	—	70'43
11. Organs of Locomotion -		107	—	—	—	7	8	6'83
12. Connective Tissue -		259	—	—	—	2	—	11'40
13. Skin -		748	—	—	—	2	—	34'41
III.—POISONS -		15	2	—	2	—	—	30
IV.—INJURIES.								
1. General -		34	11	—	11	2	1	2'25
2. Local -		1,231	12	—	12	9	9	58'06
3. In Action -		—	—	—	—	—	—	—
No appreciable disease -		23	—	—	—	—	—	—
Cause unknown (refers to deaths only) -		—	—	—	—	—	—	—
General Total -		19,392	137	8	145	298	140	1,018'26
• Average of 10 years, 1883-92 -		—	—	—	—	—	—	—

† The average ratios for 10 years will be given in future years. The average ratios for the eight in that for

SIONS into HOSPITAL, DEATHS, NUMBERS INVALIDED and CONSTANTLY SICK with the Ratios per 1,000 of the Strength and the Average Ratios for 10 Years.\*

Ratio per 1,000.					Average Ratio per 1,000 from 1886 to 1892.†				
Admis- sions.	Deaths.	Invalids sent Home.	Invalids finally Dis- charged.	Con- stantly Sick.	Admis- sions.	Deaths.	Inva- lids sent Home.	Invalids finally Dis- charged.	Con- stantly Sick.
1.5	.15	—	—	.12	1.0	.08	—	—	.08
6.0	—	—	—	.28	.5	.01	—	—	.04
12.8	3.70	.44	—	1.99	14.2	4.30	.06	.01	1.80
32.8	—	—	—	1.72	78.3	.09	.04	—	3.07
—	—	—	—	—	—	—	—	—	—
.4	.29	—	—	.01	1.8	1.27	—	—	.03
19.9	.52	.22	—	1.01	21.4	.63	.82	.19	1.35
.3	—	—	—	.01	4.5	.02	—	—	.11
73.7	4.66	.66	—	5.13	121.7	6.41	.91	.20	6.48
448.3	.52	2.96	.29	12.81	359.0	.39	1.48	.16	10.46
1.0	—	—	.07	.04	.9	.08	.01	—	.05
141.2	—	—	—	11.31	132.0	—	.02	—	10.24
60.7	.07	2.14	.37	5.01	44.3	.05	1.88	.95	3.78
185.0	—	.15	.15	12.65	165.5	—	.16	.05	11.26
396.9	.07	2.29	.52	28.97	341.8	.05	2.06	1.00	25.28
—	—	—	—	—	—	.02	—	—	—
1.8	—	—	—	.12	4.3	.01	.04	—	.13
.4	—	—	—	.07	1.0	—	.05	—	.05
3.6	.15	—	—	.10	7.4	.15	.01	—	.19
31.3	—	4.14	.74	1.54	33.1	.02	5.11	1.80	1.93
27.7	.15	.74	.15	1.44	25.2	.06	.97	.35	1.62
3.4	.52	.74	.59	.31	4.2	.90	1.55	1.04	.56
7.1	.15	.44	.29	.48	14.4	.15	.77	.19	.86
10.1	.37	1.11	1.11	.79	10.1	.33	1.24	.82	.60
1.8	—	1.11	1.18	.32	3.3	.01	1.22	1.42	.38
13.3	—	.52	.52	.89	14.5	—	.86	.71	.90
11.7	—	.44	.44	.69	15.0	—	1.23	.84	.79
9.5	.22	2.37	2.66	.70	13.2	.32	2.85	2.09	1.15
20.0	.74	.15	.07	.80	28.3	.67	.96	.63	1.66
96.4	1.26	1.92	.52	3.67	129.3	1.62	2.18	.74	5.03
21.5	—	.15	.07	2.62	31.8	.02	.27	.16	3.16
1.8	.07	.66	.44	.21	2.1	.18	.36	.21	.22
87.7	—	—	—	5.21	58.3	.02	.34	.23	3.36
7.9	—	.52	.59	.51	6.7	.02	.73	.52	.63
19.2	—	.15	—	.84	18.6	.01	.05	.01	.79
55.3	—	.15	—	2.55	69.7	—	.22	.02	2.83
1.1	.15	—	—	.02	.7	.06	—	—	.03
2.5	.81	.15	.07	.17	2.7	1.45	.13	.13	.13
91.1	.89	.66	.66	4.30	105.0	.63	1.09	.64	4.43
—	—	—	—	—	—	—	—	.04	—
1.7	—	—	—	.05	1.5	—	—	—	.07
—	—	—	—	—	—	—	—	—	—
1434.8	10.78	22.04	11.02	75.34	1422.8	13.51	26.68	13.88	73.67
1406.9	15.02	28.33	13.03	70.56	—	—	—	—	—

years 1886 to 1893 will be given in the Report for 1894; those for the nine years 1886 to 1894 1895, &c., &c.

**ABSTRACT No. XXX.—TABLE taken from the REPORT of the PRINCIPAL MEDICAL OFFICER  
MILITARY DISTRICTS in the BOMBAY COMMAND, with**

Military Districts.	Poona.	Mhow.	Bombay.	Deesa.	Aden.	Sind.	Nagpur.	Troops moving.	Total.											
Average Strength - - -	3,848	2,946	1,917	1,205	911	1,663	981	64	14,511											
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.										
<b>I.—GENERAL DISEASES.</b>																				
<b>GROUP "A."</b>																				
Sub-Group I. {	Small-pox - - -	13	1	3	—	—	—	1	1	2	—									
	Other Eruptive Fevers - -	4	—	—	5	—	71	1	—	—	—									
	Enteric Fever - - -	59	15	37	13	17	9	6	12	1	15									
	Other Continued Fevers -	79	—	15	—	170	125	39	9	9	—									
	Yellow Fever - - -	—	—	—	—	—	1	—	—	—	—									
	Cholera - - -	4	4	1	—	1	—	—	—	—	—									
	Dysentery - - -	112	2	24	—	30	10	1	40	3	36									
Other Diseases - - -	2	—	—	1	—	—	—	1	—	—										
Total - - -	273	22	80	13	225	9	182	10	118	5	85	3	34	1	—	—	987	63		
Sub-Group II.—Malarial Fevers -	1,092	1	1,770	—	629	—	748	1	543	1	1,096	—	168	1	13	—	—	6,092	4	
Sub-Group III.—Septic Diseases -	4	—	2	—	2	—	4	—	1	—	1	—	—	—	—	—	—	14	—	
Sub-Group IV. {	Syphilis, Primary - - -	699	—	167	—	314	—	106	—	20	—	290	—	310	—	3	—	—	1,800	—
	Secondary - - -	204	—	116	—	280	—	70	—	31	1	52	—	68	—	—	—	—	821	1
	Gonorrhoea - - -	502	—	704	—	446	—	238	—	110	—	237	—	259	—	3	—	—	2,400	—
Total - - -	1,405	—	987	—	1,040	—	414	—	101	1	579	—	637	—	6	—	—	5,229	1	
Sub-Group V.—Hydrophobia, &c.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
<b>GROUP "B."</b>																				
Sub-Group I.—Parasitic Diseases	4	—	6	—	5	—	2	—	1	—	5	—	1	—	—	—	—	24	—	
Sub-Group II. {	Scurvy - - -	1	—	—	—	—	—	2	—	2	—	—	—	—	—	—	—	5	—	
	Alcoholism - - -	4	—	13	—	7	—	9	1	10	—	4	1	—	—	—	—	47	—	
<b>GROUP "C."</b>																				
Debility, &c. - - -	118	—	32	—	83	—	36	—	67	—	64	—	23	—	—	—	—	623	—	
<b>GROUP "D."</b>																				
Rheumatism - - -	62	—	75	1	110	—	24	—	54	1	24	—	23	—	—	—	—	372	2	
Tubercular Diseases - - -	3	—	2	—	18	2	5	1	8	—	7	2	3	1	—	—	—	46	2	
Other Diseases - - -	10	—	11	—	16	—	41	—	2	1	16	1	2	—	—	—	—	96	—	
<b>II.—LOCAL DISEASES.</b>																				
Diseases of the—																				
1. Nervous & Nervous Diseases -	16	2	16	1	42	—	25	—	10	1	17	1	10	—	—	—	—	136	6	
2. System. ( Mental - - -	4	—	1	—	2	—	11	—	3	—	4	—	—	—	—	—	—	25	—	
3. Eye - - -	33	—	30	—	39	—	17	—	14	—	26	—	21	—	—	—	—	164	—	
3 & 4. Other Organs of Special Senses.	17	—	32	—	16	—	27	—	3	—	48	—	15	—	—	—	—	156	—	
5. Circulatory System - - -	17	—	18	—	18	1	18	1	10	—	41	—	6	—	—	—	—	123	2	
6. Respiratory - - -	50	2	53	3	73	1	15	—	25	—	40	3	5	—	—	—	—	370	9	
7. Digestive - - -	295	3	316	2	197	5	140	1	93	—	169	3	61	—	2	1	—	1,303	15	
8. Lymphatic and Glandular System.	82	—	61	—	40	—	18	—	6	—	43	—	41	—	—	—	—	291	—	
9. Urinary System - - -	2	—	9	—	7	1	2	—	—	—	4	—	1	—	—	—	—	45	1	
10. Generative - - -	257	—	456	—	267	—	98	—	47	—	32	—	31	—	2	—	—	1,183	—	
11. Organs of Locomotion - - -	31	—	17	—	14	—	8	—	4	—	19	—	23	—	—	—	—	107	—	
12. Connective Tissue - - -	75	—	50	—	40	—	22	—	15	—	34	—	23	—	—	—	—	259	—	
13. Skin - - -	107	—	171	—	111	—	113	—	109	—	95	—	41	—	1	—	—	746	—	
III.—POISONS - - -	2	—	1	1	—	—	—	—	8	—	4	1	—	—	—	—	—	15	2	
<b>IV.—INJURIES.</b>																				
1. General - - -	3	2	1	2	11	—	5	3	4	1	8	1	2	2	5	—	—	34	11	
2. Local - - -	284	4	331	3	223	4	119	1	90	—	126	—	53	—	—	—	—	1,231	12	
3. In Action - - -	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	23	—	
No appreciable disease - - -	9	—	4	—	1	—	1	—	—	—	8	—	—	—	—	—	—	—	—	
Cause unknown (refers to deaths only).	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
General Total - - -	4,260	36	4,545	26	3,236	23	2,009	19	1,408	11	2,610	16	1,205	5	29	1	—	19,292	177	

showing the PREVALENCE and MORTALITY of the Different Classes of DISEASE in each of the the Ratios per 1,000 of Strength during the Year 1893.

Poona.		Mhow.		Bombay.		Deesa.		Aden.		Sind.		Nagpur.		Troops moving.		Total.	
Ratio per 1,000 of Strength.																	
Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
3'4	'26	1'0	—	'5	—	—	—	—	—	'6	'60	2'1	—	—	—	1'5	'15
1'0	—	—	—	2'6	—	—	—	77'9	—	'6	—	—	—	—	—	6'0	—
15'3	3'80	12'6	4'41	8'9	4'69	31'5	7'47	6'5	2'20	4'2	'60	9'4	1'04	—	—	12'8	3'70
20'5	—	5'1	—	88'7	—	103'7	—	1'1	—	23'4	—	15'6	—	—	—	32'9	—
1'0	1'04	'3	—	'5	—	—	—	—	—	—	—	—	—	—	—	'4	'30
2'1	'52	8'1	—	15'6	—	15'8	'83	43'9	3'29	21'6	'60	8'3	—	—	—	19'9	'52
'5	—	—	—	'5	—	—	—	—	—	'6	—	—	—	—	—	'3	—
70'9	5'72	27'2	4'41	117'4	4'69	151'4	8'30	129'5	5'49	51'1	1'80	35'4	1'04	—	—	73'7	4'66
53'8	'26	600'8	—	328'1	—	620'8	'83	596'0	1'10	659'0	—	174'8	1'04	203'1	—	448'3	'30
1'0	—	'7	—	1'0	—	3'3	—	1'1	—	'6	—	—	—	—	—	1'0	—
151'7	—	50'7	—	163'8	—	88'0	—	22'0	—	174'4	—	322'6	—	46'9	—	141'2	—
13'9	—	39'4	—	146'7	—	58'1	—	31'0	1'10	31'3	—	70'8	—	—	—	60'7	'07
13'3	—	239'0	—	232'7	—	197'5	—	120'7	—	142'5	—	239'5	—	46'9	—	185'0	—
363'1	—	335'0	—	542'5	—	343'6	—	176'7	1'10	348'2	—	662'8	—	93'8	—	386'9	'07
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1'0	—	2'0	—	2'6	—	1'7	—	1'1	—	3'0	—	1'0	—	—	—	1'8	—
'3	—	—	—	—	—	—	—	2'2	—	1'2	—	—	—	—	—	'4	—
1'0	—	4'4	—	3'7	—	7'5	'83	11'0	—	2'4	'60	—	—	—	—	3'6	'15
30'7	—	10'9	—	48'3	—	29'9	—	73'5	—	38'5	—	23'9	—	—	—	31'3	—
16'1	—	25'5	'34	57'4	—	19'9	—	59'3	1'10	14'4	—	23'9	—	—	—	27'7	'15
'5	—	'7	—	9'4	1'04	4'1	'83	8'8	—	4'2	1'20	3'1	1'04	—	—	3'4	'44
2'6	—	3'7	—	8'3	—	34'0	—	2'2	1'10	9'6	'60	2'1	—	—	—	7'1	'15
4'2	'52	5'4	'34	21'9	—	20'8	—	11'0	1'10	10'2	'60	10'4	—	—	—	10'1	'37
1'0	—	'3	—	1'0	—	9'1	—	3'3	—	2'4	—	—	—	—	—	1'8	—
8'6	—	10'2	—	20'3	—	14'1	—	15'4	—	15'6	—	21'9	—	—	—	13'3	—
4'4	—	10'9	—	8'3	—	22'4	—	3'3	—	28'9	—	15'6	—	—	—	11'7	—
4'4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
13'0	'52	6'1	—	9'4	'52	14'9	'83	11'0	—	24'7	—	6'2	—	—	—	9'5	'15
76'7	'78	18'0	1'02	38'1	'52	12'4	—	27'4	—	29'5	1'80	5'2	—	—	—	20'0	'67
71'3	—	107'3	'68	102'8	2'61	116'2	'83	102'1	—	101'6	1'80	53'1	—	31'3	15'63	98'4	1'11
—	—	20'7	—	20'9	—	14'9	—	6'6	—	25'9	—	42'7	—	—	—	21'6	—
'5	—	3'1	—	3'7	'52	1'7	—	—	—	2'4	—	1'0	—	—	—	1'8	'07
6'8	—	154'8	—	139'3	—	77'2	—	51'6	—	19'2	—	32'3	—	3'3	—	87'7	—
4'1	—	5'8	—	7'3	—	6'6	—	4'4	—	11'4	—	14'6	—	—	—	7'9	—
38'5	—	17'0	—	20'9	—	18'3	—	16'5	—	20'4	—	23'1	—	—	—	19'2	—
27'9	—	58'0	—	57'9	—	93'8	—	119'6	—	57'1	—	42'7	—	15'7	—	55'3	—
'5	—	'3	'34	—	—	—	—	8'8	—	2'4	'60	—	—	—	—	1'1	'15
'8	'52	'3	'68	5'7	—	4'1	2'49	4'4	1'10	4'8	'60	2'1	2'08	—	—	2'5	'81
73'8	1'04	112'4	1'02	116'3	2'09	98'8	'83	98'8	—	75'8	—	55'6	—	78'1	—	91'1	'89
2'8	—	1'4	—	'5	—	'8	—	—	—	4'8	—	—	—	—	—	1'7	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1107'1	9'36	1542'8	8'83	1688'1	12'00	1741'9	15'77	1546'5	12'07	1569'4	9'62	1253'9	5'20	453'1	15'63	1434'8	10'14



ABSTRACT No. XXXI.—The following TABLE, taken from the REPORT of the PRINCIPAL MEDICAL OFFICER, shows the ADMISSIONS and DEATHS which took place in the PRINCIPAL STATIONS in the BOMBAY COMMAND during the Year 1893, with the RATIOS per 1,000 of strength.

Military Districts.	Stations.	Average Strength.	Number of Admissions.	Number of Deaths.	Ratio per 1,000 of Strength.			
					Admissions.	Deaths.	Average of 10 Years, 1883-92.	
							Admissions.	Deaths.
Poona	Poona	2,023	2,399	21	1185·9	10·38	1143·8	9·78
	Kirkee	824	946	7	1148·1	8·50	1108·1	7·56
	Ahmednagar	693	532	4	767·7	5·77	1488·3	11·31
	Satara	175	238	2	1325·7	11·43	1456·5	5·53
	Purandhur	133	145	2	1090·2	15·04	1850·5	8·12
Mhow	Mhow	1,589	2,095	9	1318·4	5·66	1515·3	11·60
	Nasirabad	716	1,093	7	1526·5	9·78	1559·0	19·85
	Neemuch	500	1,147	7	2294·0	14·00	1438·4	20·97
	Indore	108	138	1	1277·8	9·25	1701·2	17·81
	Taragarh	31	71	1	2290·3	32·25	2530·8	38·68
	Khundwa	2	1	1	500·0	500·00	—	—
Bombay	Bombay	1,148	1,698	17	1479·1	14·81	1380·6	9·49
	Deolali	675	1,400	6	2074·1	8·89	1240·4	37·57
	Khandalla	94	138	—	1468·1	—	897·4	—
Deesa	Deesa	869	1,294	7	1489·1	8·06	1401·4	10·29
	Ahmedabad	232	533	10	2297·4	43·10	1895·8	14·64
	Abu	104	272	2	2615·3	19·23	1923·0	15·30
Aden	Aden	911	1,408	11	1545·5	12·07	1402·5	12·25
Sind	Karachi	1,270	2,087	15	1643·3	11·81	1576·3	15·31
	Hyderabad	393	523	1	1330·8	2·54	1662·0	10·33
Nagpur	Kamptee	906	1,111	4	1226·2	4·42	1435·7	10·37
	Sitabuldi	55	94	1	1709·1	18·18	1463·2	15·18
	Troops moving	64	29	1	453·1	15·62	495·6	17·44
Total		13515	19392	137	1434·8	10·14	—	—

**ABSTRACT No. XXXII.—TABLE, taken from the REPORT of the PRINCIPAL MEDICAL OFFICER, showing the STATIONS in the BOMBAY COMMAND at which ADMISSIONS and DEATHS from ENTERIC FEVER took place in each of the Four Quarters of the Year 1893.**

Military Districts.	Stations.	1st Quarter.		2nd Quarter.		3rd Quarter.		4th Quarter.		Total.	
		Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Poona - - -	Poona - - -	6	1	2	2	14	4	2	3	24	10
	Kirkee - - -	6	1	6	1	4	—	2	—	18	2
	Ahmednagar - - -	3	—	6	1	4	—	—	—	13	1
	Satara - - -	—	—	1	—	—	—	—	—	1	—
	Purandhur - - -	—	—	3	2	—	—	—	—	3	2
Mhow - - -	Mhow - - -	—	—	2	1	8	2	—	1	10	4
	Nasirabad - - -	5	1	9	2	1	—	—	—	15	3
	Neemuch - - -	—	—	1	—	9	5	1	—	11	5
	Taragarh - - -	—	—	1	1	—	—	—	—	1	1
Bombay - - -	Bombay - - -	1	1	1	—	8	4	—	—	10	5
	Deolali - - -	2	1	1	1	3	2	1	—	7	4
Deesa - - -	Deesa - - -	10	—	9	2	1	—	1	1	21	3
	Ahmedabad - - -	1	1	5	1	7	4	—	—	13	6
	Abu - - -	—	—	2	—	2	—	—	—	4	—
Aden - - -	Aden - - -	2	—	—	—	1	1	3	1	6	2
Sind - - -	Karachi - - -	2	1	2	—	2	—	1	—	7	1
Nagpur - - -	Kamptee - - -	—	—	1	—	6	—	2	1	9	1
Total - - -		38	7	52	14	70	22	13	7	173	50

**ABSTRACT No. XXXIII.—TABLE, taken from the REPORT of the PRINCIPAL MEDICAL OFFICER, showing the STATIONS in the BOMBAY COMMAND at which ADMISSIONS and DEATHS from CHOLERA took place in each of the Four Quarters of the Year 1893.**

Military Districts.	Stations.	1st Quarter.		2nd Quarter.		3rd Quarter.		4th Quarter.		Total.	
		Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Poona - - -	Poona - - -	—	—	—	—	1	1	—	—	1	1
	Kirkee - - -	—	—	—	—	1	1	—	—	1	1
	Ahmednagar - - -	—	—	—	—	1	1	1	1	2	2
Mhow - - -	Indore - - -	—	—	—	—	1	—	—	—	1	—
Bombay - - -	Bombay - - -	1	—	—	—	—	—	—	—	1	—
Total - - -		1	—	—	—	4	3	1	1	6	4

ABSTRACT No. XXXIV.—Table, taken from the REPORT of the PRINCIPAL MEDICAL OFFICER, showing the PREVALENCE of DYSENTERY, DIARRHŒA, HEPATITIS, and ABSCESS OF LIVER in each DISTRICT in the BOMBAY COMMAND for the Year 1893.

Districts.	Poona.		Mhow.		Bombay.		Deesa.		Aden.		Sind.		Nagpur.		On the March.		Total.	
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Strength.	8,848		2,946		1,917		1,205		911		1,663		961		64		13,515	
Diseases.																		
Dysentery -	112	2	24	—	30	—	19	1	40	3	36	1	8	—	—	—	269	7
Diarrhœa -	72	—	99	—	34	—	24	—	20	—	32	—	5	—	1	—	287	—
Hepatitis and Abscess of Liver.	27	2	25	1	27	2	9	1	18	—	6	1	14	—	—	—	126	7
Total -	211	4	148	1	91	2	52	2	78	3	74	2	27	—	1	—	682	14

Ratio per 1,000 of Strength.																		
Dysentery -	29.1	.52	8.1	—	15.6	—	15.8	.83	43.9	3.29	21.6	.60	8.3	—	—	—	19.9	.52
Diarrhœa -	18.7	—	33.6	—	17.7	—	19.9	—	21.9	—	19.2	—	5.2	—	15.6	—	21.2	—
Hepatitis and Abscess of Liver.	7.0	.52	8.5	.34	14.1	1.04	7.5	.83	19.8	—	3.6	.60	14.6	—	—	—	9.3	.52
Total -	54.8	1.04	50.2	.34	47.5	1.04	43.2	1.67	85.6	3.29	44.5	1.20	28.1	—	15.6	—	50.5	1.04

ABSTRACT No. XXXV.—TABLE, taken from the REPORT of the PRINCIPAL MEDICAL OFFICER, showing the PREVALENCE and MORTALITY in the BOMBAY COMMAND, due to DYSENTERY, DIARRHŒA, HEPATITIS, and ABSCESS OF LIVER in each Quarter of the Year 1893.

Quarter.	Strength.	Dysentery.				Diarrhœa.				Hepatitis and Abscess of Liver.				Total.			
		Number.		Ratio per 1,000 of the Strength.		Number.		Ratio per 1,000 of the Strength.		Number.		Ratio per 1,000 of the Strength.		Number.		Ratio per 1,000 of the Strength.	
		Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
1st Quarter	- 13,478	57	3	4.2	.15	61	—	4.5	—	35	3	2.6	.22	153	5	11.4	.37
2nd "	- 13,718	30	—	2.2	—	43	—	3.1	—	23	1	1.7	.07	96	1	7.0	.07
3rd "	- 13,464	118	2	8.8	.15	182	—	9.8	—	24	1	1.8	.07	274	3	20.4	.22
4th "	- 13,398	64	3	4.8	.22	51	—	3.8	—	44	2	3.3	.15	159	5	11.9	.37
Total	- 13,515	269	7	19.9	.52	287	—	21.2	—	136	7	9.3	.52	682	14	50.5	1.04

ABSTRACT No. XXXVI.—TABLE showing the AVERAGE STRENGTH SICK among the TROOPS stationed in EGYPT during the Year 1893, with

Average Strength, 5,073.		Admissions into Hospital.	Deaths.			Invalids.		Average Number constantly Sick.
Diseases.			In the Com- mand.	Of Invalids.	Total.	Number sent Home.	Number finally Dis- charged the Service.	
I.—GENERAL DISEASES.								
GROUP "A."								
Sub-Group I.	Small-pox	4	—	—	—	—	—	74
	Other Eruptive Fevers	19	—	—	—	—	—	217
	Enteric Fever	104	27	—	27	3	1	1648
	Other Continued Fevers	522	1	—	1	—	—	2127
	Yellow Fever	—	—	—	—	—	—	—
	Cholera	—	—	—	—	—	—	—
	Dysentery	90	8	—	8	3	2	626
Other Diseases		—	—	—	—	—	—	—
Total		739	36	—	36	6	3	4692
Sub-Group II.—Malarial Fevers		152	1	—	1	1	—	588
Sub-Group III.—Septic Diseases		6	—	—	—	—	—	24
Sub-Group IV.	Syphilis, Primary	287	—	—	—	—	—	2700
	Secondary	232	—	—	—	3	2	2181
	Gonorrhoea	775	—	—	—	—	—	6077
Total		1,294	—	—	—	3	2	11018
Sub-Group V.—Hydrophobia, &c.		—	—	—	—	—	—	—
GROUP "B."								
Sub-Group I.—Parasitic Diseases		22	—	—	—	—	—	55
Sub-Group II.	Scurvy	1	—	—	—	1	—	33
	Alcoholism	15	—	—	—	—	—	89
GROUP "C."								
Debility, &c.		98	—	—	—	7	4	857
GROUP "D."								
Rheumatism		212	1	—	1	2	—	1348
Tubercular Diseases		11	2	1	3	3	1	308
Other Diseases		43	—	—	—	3	1	478
II.—LOCAL DISEASES.								
Diseases of the—								
1. Nervous System	{ Nervous Diseases	93	2	—	2	6	5	486
		{ Mental	13	1	—	1	8	3
	2. Eye	372	—	—	—	4	4	1940
	3 & 4. Other Organs of Special Senses	107	—	—	—	1	1	576
	5. Circulatory System	23	2	—	2	5	7	286
	6. Respiratory	448	13	—	13	—	1	2817
	7. Digestive	959	7	—	7	8	6	3457
	8. Lymphatic and Glandular System	82	—	—	—	—	—	850
	9. Urinary System	9	—	—	—	1	1	146
	10. Generative	905	—	—	—	6	3	5820
	11. Organs of Locomotion	52	—	—	—	3	4	482
	12. Connective Tissue	195	—	—	—	—	—	967
	13. Skin	320	—	—	—	—	—	1688
III.—POISONS		10	—	—	—	—	—	30
IV.—INJURIES.								
1. General		6	3	—	3	1	1	60
2. Local		551	—	—	—	3	2	2612
3. In Action		15	—	—	—	—	—	54
No appreciable disease		—	—	—	—	—	—	—
Cause unknown (refers to deaths only)		—	—	—	—	—	—	—
General Total		6,753	68	1	69	72	40	41715
* Average of 10 years, 1883-92		—	—	—	—	—	—	—

† The average ratios for 10 years will be given in future years. The average ratios for the 1886 to 1894 in

ADMISSIONS into HOSPITAL, DEATHS, NUMBERS INVALIDED and CONSTANTLY the Ratios per 1,000 of the Strength, and the Average Ratios for 10 Years.\*

Ratio per 1,000.					Average Ratio per 1,000 from 1886 to 1892.†				
Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.	Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
.8	—	—	—	.15	4.2	.52	—	—	.43
3.8	—	—	—	.43	1.9	—	—	—	.14
20.5	5.32	.59	.20	3.25	42.9	11.54	10.80	.03	6.81
102.9	.20	—	—	4.19	143.5	.03	2.06	—	5.66
—	—	—	—	—	—	—	—	—	—
17.7	1.58	.59	.30	1.23	47.0	1.72	3.68	.28	3.62
—	—	—	—	—	3.7	.03	—	—	.13
145.7	7.10	1.18	.59	9.25	243.2	13.84	16.54	.31	16.79
30.0	.20	.20	—	1.10	14.0	—	.31	.06	.59
1.2	—	—	—	.05	1.7	.12	.06	—	.10
56.6	—	—	—	5.44	65.4	—	.12	—	5.29
45.7	—	.59	.39	4.30	31.7	—	1.11	.49	2.70
152.8	—	—	—	11.98	100.9	—	.12	.03	6.33
255.1	—	.59	.39	21.72	198.0	—	1.35	.52	14.32
—	—	—	—	—	—	—	—	—	—
4.3	—	—	—	.11	4.9	.03	—	—	.13
.2	—	.20	—	.06	.1	—	—	—	.01
3.0	—	—	—	.17	6.2	.12	.03	—	.21
19.3	—	1.33	.79	1.69	30.8	—	5.83	2.52	2.03
41.8	.20	.39	—	2.66	24.4	.18	1.44	.31	1.68
2.2	.59	.59	.20	.61	3.0	.65	2.06	1.63	.63
8.5	—	.59	.20	.94	10.3	.03	.31	.09	.61
18.3	.39	1.18	.99	.96	8.2	.46	1.38	1.07	.53
2.5	.20	1.58	.59	.53	1.6	.03	1.50	1.93	.30
73.3	—	.79	.79	3.82	47.7	—	.86	.46	1.94
21.1	—	.20	.20	1.13	14.1	—	.61	.65	.74
4.5	.39	.99	1.38	.66	14.5	.28	4.54	4.57	1.50
88.3	2.56	—	.20	4.96	33.2	.89	1.44	.89	2.21
189.0	1.38	1.58	1.18	6.81	152.4	1.57	3.19	1.01	6.03
16.2	—	.20	—	1.68	20.8	—	.40	.15	2.42
1.8	—	—	.20	.29	2.0	.06	.21	.18	.13
178.4	—	1.18	.59	11.47	88.9	—	.31	.31	6.05
10.2	—	.59	.79	.95	7.7	—	.46	.52	.53
38.4	—	—	—	1.91	26.1	—	.28	.06	1.28
63.1	—	—	—	3.32	56.0	—	.24	—	2.50
2.0	—	—	—	.08	.4	.12	—	—	—
1.2	.59	.20	.20	.14	2.8	1.78	.18	.03	.17
168.6	—	.59	.39	5.15	90.5	.86	1.23	.71	4.18
3.0	—	—	—	.11	3.4	.06	.25	.18	.08
—	—	—	—	—	—	—	—	—	.10
1331.2	13.60	14.19	9.66	82.23	1106.9	21.08	45.10	18.16	67.84
1200.0	23.25	69.33	24.86	72.29	—	—	—	—	—

eight years 1886 to 1893 will be given in the Report for 1894; those for the nine years that for 1895, &c., &c.

ABSTRACT No. XXXVII.—TABLE showing the AVERAGE STRENGTH, SHIP proceeding on and returning from Foreign Service, and proceeding Strength during the Year 1893.

Strength of W.O., N.C.O., and Men :		Passage Out.		Passage Home.	
Embarked - - - -		21,318		13,458	
Average Annual Strength - -		1,371		814	
		Admitted.	Died.	Admitted.	Died.
<b>I.—GENERAL DISEASES.</b>					
GROUP "A."					
Sub-Group I.	Small-pox - - - -	—	—	—	—
	Other Eruptive Fevers - -	4	—	—	—
	Enteric Fever - - - -	1	—	1	—
	Other Continued Fevers - -	12	—	13	—
	Yellow Fever - - - -	—	—	—	—
	Cholera - - - -	—	—	—	—
	Dysentery - - - -	—	—	14	—
	Other Diseases - - - -	—	—	—	—
Total - - - -		17	—	27	—
Sub-Group II.—Malarial Fevers - -		—	—	52	—
Sub-Group III.—Septic Diseases - -		2	—	—	—
Sub-Group IV.	Syphilis, Primary - - - -	128	—	160	—
	" Secondary - - - -	36	—	38	—
	Gonorrhoea - - - -	372	—	189	—
Total - - - -		536	—	387	—
Sub-Group V.—Hydrophobia, &c. - -		—	—	—	—
GROUP "B."					
Sub-Group I.—Parasitic Diseases - -		—	—	1	—
Sub-Group II.	Scurvy - - - -	—	—	—	—
	Alcoholism - - - -	1	—	3	—
GROUP "C."					
Debility, &c. - - - -		10	—	6	—
GROUP "D."					
Rheumatism - - - -		30	—	22	—
Tubercular Diseases - - - -		1	—	1	—
Other Diseases - - - -		24	—	—	—
<b>II.—LOCAL DISEASES.</b>					
Diseases of the—					
1. Nervous System { Nervous Diseases		3	—	2	—
" { Mental " "		2	—	1	—
2. Eye - - - -		16	—	10	—
3 & 4. Other Organs of Special Senses -		13	—	2	—
5. Circulatory System - - - -		2	—	1	—
6. Respiratory " - - - -		96	2	49	4
7. Digestive " - - - -		129	1	43	1
8. Lymphatic and Glandular System -		20	—	27	—
9. Urinary System - - - -		2	—	—	—
10. Generative " - - - -		166	1	53	—
11. Organs of Locomotion - - - -		3	1	2	—
12. Connective Tissue - - - -		39	—	20	—
13. Skin - - - -		99	—	17	—
<b>III.—POISONS.</b>					
		—	—	—	—
<b>IV.—INJURIES.</b>					
1. General - - - -		2	—	1	—
2. Local - - - -		85	—	33	—
3. In Action - - - -		—	—	—	—
No appreciable disease - - - -		1	—	—	—
Cause unknown (refers to deaths only) -		—	—	—	—
General Total - - - -		1,299	4	770	6

ADMISSIONS into HOSPITAL; and DEATHS among the TROOPS ON BOARD from one Colony or Station abroad to another, with the Ratio per 1,000 of the

Intercolonial.		Ratio per 1,000 of the Strength.					
11,322 533		Passage Out.		Passage Home.		Intercolonial.	
Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
—	—	—	—	—	—	—	—
1	—	2'9	—	1'2	—	1'9	—
13	—	7	—	14'7	—	24'4	—
—	—	8'7	—	—	—	—	—
3	—	—	—	—	—	—	—
67	—	—	—	17'2	—	5'6	—
—	—	—	—	—	—	125'7	—
84	—	12'4	—	33'2	—	157'6	—
106	2	—	—	63'9	—	198'9	3'75
—	—	1'5	—	—	—	—	—
75	—	93'4	—	196'6	—	140'7	—
13	—	26'2	—	46'7	—	24'4	—
178	—	271'3	—	232'2	—	334'0	—
266	—	390'9	—	475'5	—	499'1	—
—	—	—	—	—	—	—	—
—	—	—	—	1'2	—	—	—
3	—	7	—	3'7	—	5'6	—
3	—	7'3	—	7'4	—	5'6	—
15	—	21'9	—	27'0	—	28'1	—
3	—	7	—	1'2	—	5'6	—
—	—	17'5	—	—	—	—	—
5	—	2'2	—	2'4	—	9'4	—
8	—	1'5	—	1'2	—	—	—
7	—	11'7	—	12'3	—	15'0	—
—	—	9'6	—	2'4	—	13'1	—
51	—	1'5	—	1'2	1'23	—	—
43	—	70'0	1'46	60'2	4'91	95'7	—
18	—	94'1	'73	52'8	1'23	90'7	—
—	—	14'6	—	33'2	—	33'8	—
72	—	1'5	—	—	—	—	—
1	—	121'0	—	71'3	—	135'1	—
13	—	2'2	'73	2'4	—	1'9	—
44	—	28'4	—	24'6	—	24'4	—
—	—	72'2	—	20'9	—	82'5	—
—	—	—	—	—	—	—	—
1	1	1'5	—	1'2	—	1'9	1'87
44	—	62'0	—	46'7	—	82'5	—
—	—	—	—	—	—	—	—
—	—	7	—	—	—	—	—
—	—	—	—	—	—	—	—
787	3	947'5	2'92	945'9	7'37	1476'5	5'62



ABSTRACT No. XXXVIII.—ON THE INFLUENCE OF AGE ON THE MORTALITY.—Table showing the Death Rates of Warrant Officers, Non-commissioned Officers and Men, at the several Ages, arranged by quinquennial Periods, in the several Foreign Commands.

Commands.	Under 20 Years.				20 and under 25.				25 and under 30.				30 and under 35.				35 and under 40.				40 and upwards.			
	Strength.		Ratio per 1,000.		Strength.		Ratio per 1,000.		Strength.		Ratio per 1,000.		Strength.		Ratio per 1,000.		Strength.		Ratio per 1,000.		Strength.		Ratio per 1,000.	
	Died.	1883.	1883-92.		Died.	1883.	1883-92.		Died.	1883.	1883-92.		Died.	1883.	1883-92.		Died.	1883.	1883-92.		Died.	1883.	1883-92.	
Gibraltar	1,257	1	79	3.25	1,953	5	2.56	4.38	1,102	2	1.81	4.80	285	1	3.51	6.36	108	1	9.26	6.46	38	1	26.32	21.60
Malta	1,067	7	6.56	5.80	3,497	37	10.58	7.62	2,087	14	6.71	7.20	380	2	5.14	7.05	85	1	11.76	12.80	36	—	—	16.43
Cyprus	—	—	—	2.22	290	—	—	10.37	205	—	—	3.09	28	1	32.71	20.83	12	—	—	35.50	4	—	—	—
Egypt	413	7	16.95	13.95	2,476	41	16.56	24.45	1,502	15	9.42	16.99	375	4	10.67	16.00	176	1	5.68	19.18	41	—	—	41.21
Canada	—	—	—	2.03	637	—	—	29.92	530	1	1.80	3.60	107	—	—	7.96	39	—	—	19.10	22	—	—	10.20
Bermuda	—	—	—	6.56	678	7	10.32	8.88	514	5	9.73	9.46	111	—	—	11.27	22	—	—	16.24	10	—	—	31.50
West Indies	—	—	—	6.85	611	6	9.82	7.84	402	1	2.03	10.43	86	1	1.16	10.02	45	—	—	3.54	8	—	—	50.85
South Africa and St. Helena	182	—	—	5.51	1,440	11	7.64	6.13	1,182	1	8.5	6.00	294	5	17.01	7.28	83	—	—	6.47	33	—	—	19.52
Mauritius	—	—	—	14.71	281	2	7.12	13.91	188	4	21.28	18.16	38	2	52.63	18.97	8	—	—	19.23	2	—	—	3.12
Ceylon	—	—	—	3.15	743	5	6.73	10.43	567	3	5.29	13.70	63	2	31.75	18.02	24	—	—	11.81	4	—	—	—
China	—	—	—	—	575	10	17.39	7.88	692	6	8.67	11.36	86	—	—	17.05	26	—	—	11.63	8	—	—	54.54
Straits Settlements	—	—	—	2.05	559	—	—	6.78	464	2	4.06	5.98	101	1	9.80	5.96	23	—	—	11.11	3	—	—	23.81
India	2,096	18	8.59	8.77	34,190	513	15.60	16.80	24,739	235	10.51	13.00	5,760	66	11.46	13.16	1,799	18	10.01	15.35	431	11	25.52	21.63

\* For eight years only (1883 to 1892).

ABSTRACT No. XXXIX.—TABLE showing the various Corps which served in the UNITED KINGDOM during the Year 1893, and some of the most important of their HEALTH STATISTICS.

Battalion or Bat-	Corps.	Average Annual Strength.	Admitted into Hospital.	Died.	Invalided.	Average Con- stantly Sick.	Ratio per 1,000 of Mean Strength.			Average Time to each Sick.	Average Duration of each Case of Sickness.	Stations occupied during the Year, &c.	Years at Home since last return from Foreign Service.
							Admitted.	Died.	Invalided.	Average Contingent Sick.	days.		
<b>HOUSEHOLD CAVALRY.</b>													
1st	Life Guards	382	381	—	10	17.51	997.4	—	25.51	44.67	16.34	Shorncliffe, 6½ months; London 5½ months, 12 months. Detachment at Aldershot, 7½ months; Windsor, 4½ months.	77
2nd	Life Guards	433	302	4	2	12.52	466.5	9.24	4.62	28.91	22.67	London, 12 months. Detachment at Aldershot, 7½ months; Windsor, 4½ months.	77
	Royal Horse Guards	357	301	6	9	18.06	843.1	16.81	25.21	50.59	21.90	London, 7½ months; Windsor, 4½ months.	77
	Household Cavalry detached	3	1	—	—	.32	—	—	—	—	—	—	
	Total Household Cavalry	1,185	885	10	21	48.41	755.3	8.44	17.72	40.85	14.91	—	
<b>CAVALRY.</b>													
1st	Dragon Guards	354	366	3	6	16.10	1033.9	8.47	10.95	53.95	19.06	Windsor, 7 months; Norwich, 5 months. Detachment at Bristol, 12 months.	2
4th	Dragon Guards	643	362	5	9	27.81	583.0	7.77	13.09	43.25	15.78	Aldershot, 12 months. Detachment at Bristol, 12 months.	11
5th	Dragon Guards	409	369	1	7	25.51	902.2	2.44	17.11	62.37	22.76	Shorncliffe, 2 months. To India.	37
6th	Dragon Guards	386	349	2	6	16.08	904.1	5.18	15.54	42.95	15.08	York, 5½ months; Piershill, 6½ months.	5
1st	Royal Dragons	540	382	4	9	22.02	685.8	7.28	16.39	40.11	14.64	York, 5½ months; Dublin, 6½ months.	37
2nd	Royal Dragons	607	478	1	13	40.77	787.5	1.65	21.42	67.17	24.51	Aldershot, 5 months; Dublin, 7 months.	37
3rd	Russars	842	702	2	14	50.90	833.7	2.37	16.63	60.45	22.06	Dublin, 12 months. Detachment at Curragh.	14

Battery or Bat-	Corps.	Average Annual Strength.	Admitted into Hospital.	Died.	Invalid.	Average Constantly Sick.	Ratio per 1,000 of Mean Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year, &c.	Years at Home since last return from Foreign Service.
							Admitted.	Died.	Invalid.	Average Constantly Sick.				
CAVALRY—cont.														
4th	Hussars	604	364	1	13	28.11	602.6	1.65	21.52	40.54	16.90	28.10	Aldershot, 4 months; Colchester, 8 months.	15
6th	Dragoons	374	444	4	11	19.67	1187.2	10.69	29.41	52.59	19.19	16.17	Brighton, 12 months	3
8th	Hussars	425	315	1	2	16.20	741.2	2.35	4.70	38.12	13.91	18.77	Hounslow, 5 months; Norwich, 7 months. Detachment at Aldershot.	4
9th	Lancers	562	360	1	13	25.48	640.6	1.78	23.13	45.34	16.53	25.83	Newbridge, 12 months	8
10th	Hussars	483	280	1	1	9.72	538.3	2.07	2.07	20.13	7.35	13.65	Cahir, 12 months	9
12th	Lancers	391	352	4	8	15.04	900.2	10.23	20.46	38.46	14.04	15.59	Preston, 7 months; Piershill, 5 months	6
13th	Hussars	415	211	—	2	9.50	508.4	—	4.82	22.89	8.35	16.43	Ballinacraig, 12 months. Detachment at Curragh.	8
14th	Hussars	413	265	1	5	13.88	641.6	2.42	12.10	33.61	12.68	19.12	Manchester, 12 months. Detachments at Altcar and Fleetwood.	7
15th	Hussars	562	316	3	8	16.21	562.3	5.34	14.23	23.84	10.53	18.72	Dundalk and Belfast, 12 months	12
17th	Lancers	381	334	1	3	15.08	876.6	2.62	7.87	30.58	14.45	16.48	Hounslow, 6½ months; Preston, 5½ months.	3
20th	Hussars	562	552	4	8	36.09	948.4	6.87	13.74	62.01	22.63	23.86	Aldershot, 9 months; Colchester, 3 months.	6
	Cavalry Depot	1,376	1,832	19	24	78.72	1337.2	13.87	17.52	57.46	20.97	15.68	Canterbury, 12 months	Since formation.
	Other Corps	225	80	—	7	20.34	396.5	—	31.11	90.40	32.99	83.42		
	Total Cavalry of the Line	10,577	8,702	58	169	506.73	822.7	5.48	15.98	47.91	17.48	21.25		

Battery or Bat-	Corps.	Average Annual Strength.	Admitted into Hospital.	Died.	Invalided.	Average Annu- ally Sick.	Ratio per 1,000 of Mean Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year, &c.	Years at Home since last return from Foreign Service.
ROYAL ARTILLERY.														
A	Horse Artillery	216	225	3	3	14.60	1041.6	13.88	13.89	67.59	24.67	23.68	Woolwich, 12 months	Permanent.
Depôt B	Horse Artillery	217	224	2	4	14.28	1032.6	9.21	18.43	65.81	24.02	23.27	Woolwich, 12 months	"
Depôt D	Horse Artillery	137	78	1	—	5.68	540.3	7.30	—	40.73	14.86	28.11	London, 7 months; Aldershot, 5 months.	5
E	Horse Artillery	157	166	—	2	9.19	993.6	—	12.74	58.54	21.37	21.50	Woolwich, 12 months	4
F	Horse Artillery	138	86	—	3	4.35	623.2	—	21.74	31.32	11.60	18.46	Woolwich, 5 months; Aldershot, 7 months.	12
G	Horse Artillery	116	82	2	5	6.43	706.9	17.24	43.10	55.60	20.23	28.62	Aldershot, 12 months	4
I	Horse Artillery	105	55	—	1	3.76	533.8	—	9.52	35.81	13.07	24.95	Aldershot, 8 months. To India	11
J	Horse Artillery	102	96	4	4	5.92	592.6	24.69	24.69	36.54	13.34	22.51	Woolwich, 12 months	7
O	Horse Artillery	123	77	1	3	6.07	628.0	8.13	24.39	49.35	18.01	28.76	Newbridge, 12 months	—
P	Horse Artillery	115	116	—	2	5.00	1009.7	—	17.39	43.48	15.57	15.73	Dorchester, 9 months; Aldershot, 2 months; Okehampton, 1 month.	—
R	Horse Artillery	124	105	—	5	7.97	846.8	—	40.32	64.27	23.46	27.64	Newbridge, 12 months	—
T	Horse Artillery	22	15	—	—	.56	681.8	—	—	25.45	9.29	13.63	Dorchester, 3 months. From India	—
—	Riding Establishment	106	68	—	1	4.25	641.5	—	9.43	40.09	14.63	22.81	Woolwich, 12 months	Permanent.
1/7	Field Artillery	422	425	1	12	28.30	1007.1	2.37	28.44	67.28	24.55	24.38	Woolwich, 12 months	"
Depôt 2/1	Field Artillery	400	454	7	8	29.64	925.5	14.28	16.33	60.49	22.08	23.83	Woolwich, 12 months	"
Depôt 1/2	Field Artillery	406	476	1	8	25.64	1172.4	2.46	19.70	63.15	23.05	19.66	Woolwich, 12 months	"

Battery or Battalion.	Corps.	Average Annual Strength.	Admitted into Hospital.	Died.	Invalided.	Average Con- stancy Sick.	Ratio per 1,000 of Mean Strength.			Average Sick Constantly	Average Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year, &c.	Years at Home since last return from Foreign Service.
							Admitted.	Died.	Invalided.		days.	days.		
<b>ROYAL ARTILLERY—cont.</b>														
2/2 Dep't	Field Artillery -	343	453	1	10	29.24	1320.7	2.91	29.15	85.23	31.11	23.56	Woolwich, 12 months	Permanent.
1st	Field Artillery -	169	123	2	4	9.08	727.8	11.83	23.67	53.73	19.61	26.84	Aldershot, 11 months; Okehampton, 1 month.	9
3rd	Field Artillery -	106	111	1	3	9.23	668.7	6.02	18.07	55.00	20.29	30.35	Woolwich, 12 months	8
4th	Field Artillery -	110	99	1	2	6.78	900.0	9.09	18.18	61.64	22.50	25.00	Aldershot, 12 months	3
7th	Field Artillery -	94	76	1	2	2.85	808.5	10.64	21.28	30.32	11.06	13.68	Glasgow, 12 months	5
11th	Field Artillery -	134	155	1	4	6.75	1156.7	7.46	29.85	50.37	18.38	15.80	Sheffield, 9½ months; Clonmel, 2½ months. Detachments at Salford and Morcumbe.	7
12th	Field Artillery -	133	141	—	—	5.73	1057.7	—	—	43.08	15.72	14.83	Sheffield, 12 months. Detachment at Morcumbe.	7
13th	Field Artillery -	142	118	1	1	10.09	831.0	7.04	7.04	71.03	25.93	31.22	Hilsea, 3 months; Aldershot, 9 months	5
14th	Field Artillery -	138	92	—	2	5.02	643.6	—	14.40	34.38	13.28	19.92	Aldershot, 5½ months; Ipswich, 5½ months; Okehampton, 1 month.	9
16th	Field Artillery -	164	161	1	2	8.55	988.4	6.10	12.20	52.15	19.03	19.38	Weedon, 12 months	6
18th	Field Artillery -	135	96	—	3	5.11	711.1	—	22.22	37.85	13.81	19.43	Coventry, 12 months. Detachment at Morcumbe.	—
19th	Field Artillery -	16	20	—	—	.70	1250.0	—	—	43.75	15.97	12.77	Christchurch, 1 month. From India	—
20th	Field Artillery -	9	16	—	—	.42	1777.8	—	—	46.67	17.03	9.58	Shorncliffe, 4 months. From India	7
25th	Field Artillery -	143	125	2	1	5.50	874.1	13.98	6.99	38.46	15.04	16.06	Ipswich, 4 months; Okehampton, 1 month; Inverkeith, 7 months.	2
28th	Field Artillery -	82	90	1	1	6.06	1063.0	12.19	12.19	73.90	26.97	24.57	Shorncliffe, 11 months; Okehampton, 1 month.	10
29th	Field Artillery -	89	42	—	2	2.70	471.9	—	22.47	30.34	11.07	23.46	Clonmel, 8½ months. To India	

Battery or Bat-	Corps.	Average Annual Strength.	Admitted into Hospital.	Died.	Invalided.	Average Sickness. Con-	Ratio per 1,000 of Mean Strength.				Average Duration of Sickness.	Stations occupied during the Year, &c.		Years at Home since last return from Foreign Service.
							Admitted.	Died.	Invalided.	Average Sickness. Con-	Average Duration of Sickness.	Stations occupied during the Year, &c.		Years at Home since last return from Foreign Service.
	ROYAL ARTILLERY—cont.										days.			
30th Field Artillery -	-	149	104	3	1	5.08	698.0	20.13	6.71	34.09	12.44	Weedon, 12 months	-	8
32nd Field Artillery -	-	30	12	-	2	1.27	400.0	-	66.66	42.33	15.45	Aldershot, 24 months. To Egypt	-	12
37th Field Artillery -	-	102	61	1	-	2.76	538.0	9.80	-	27.05	9.37	Exeter, 11 months; Okehampton, 1 month.	-	3
38th Field Artillery -	-	112	68	-	1	3.34	607.1	-	8.92	29.82	10.88	Shorncliffe, 104 months; Aldershot, 14 months.	-	2
40th Field Artillery -	-	106	127	-	3	10.78	1108.1	-	28.30	101.70	37.12	Woolwich, 9 months. To India	-	10
41st Field Artillery -	-	130	123	-	2	6.81	773.6	-	12.58	42.85	15.63	Aldershot, 12 months	-	9
45th Field Artillery -	-	102	124	-	3	6.90	1215.7	-	29.41	64.71	23.61	Woolwich, 9 months. To India	-	10
52nd Field Artillery -	-	121	100	-	3	6.75	828.4	-	24.79	55.78	20.36	Aldershot, 14 months; Colchester, 44 months; Okehampton, 1 month; Shorncliffe, 5 months.	-	6
56th Field Artillery -	-	132	85	-	2	4.88	643.9	-	15.15	36.96	13.49	Exeter, 11 months; Okehampton, 1 month.	-	6
57th Field Artillery -	-	132	134	3	-	8.42	1015.2	23.73	-	63.79	23.28	Ipswich, 4 months; Okehampton, 1 month; Woolwich, 7 months.	-	8
58th Field Artillery -	-	144	121	-	-	8.13	840.3	-	-	56.46	20.61	Aldershot, 103 months; Woolwich, 14 months.	-	6
61st Field Artillery -	-	87	82	-	-	3.10	942.5	-	-	35.63	13.00	Christchurch, 11 months; Aldershot, 1 month.	-	2
62nd Field Artillery -	-	134	110	1	3	7.47	830.9	7.46	22.89	55.74	20.35	Newcastle, 74 months; Ipswich 44 months.	-	6
63rd Field Artillery -	-	110	80	1	1	5.83	727.3	9.09	9.09	53.00	19.34	Newcastle, 54 months; Colchester, 54 months; Okehampton, 1 month.	-	5
64th Field Artillery -	-	106	67	1	1	2.88	632.1	9.43	9.43	27.17	9.91	Sheffield, 3 months; Athlone, 9 months.	-	5
66th Field Artillery -	-	142	107	1	2	5.90	735.5	7.04	14.06	41.55	15.16	Newcastle, 12 months	-	5

Battery or Bat-	Corps.	Average Annual Strength.	Admitted into Hospital.	Died.	Invalided.	Average Con- stantly Sick.	Ratio per 1,000 of Mean Strength.				Average Sick Time to each Soldier.	Average Duration of Sickness.	Stations occupied during the Year, &c.	Years at Home since last return from Foreign Service.
							Admitted.	Died.	Invalided.	Average Constantly Sick.				
ROYAL ARTILLERY—cont.														
67th	Field Artillery -	148	72	—	1	3.67	486.5	—	6.76	24.80	9.05	18.00	Fernoy, 12 months	7
68th	Field Artillery -	131	111	—	1	6.34	847.3	—	7.63	48.40	17.66	20.85	Hilsea, 12 months	7
73rd	Field Artillery -	110	96	2	3	5.95	872.7	18.18	27.27	54.09	19.74	22.02	Newcastle, 12 months	3
74th	Field Artillery -	70	33	—	2	1.99	457.1	—	28.57	28.45	10.37	22.70	Longford and Athlone, 12 months	3
75th	Field Artillery -	132	100	1	1	5.40	767.6	7.57	7.57	40.91	14.93	19.71	Bristol, 4 months; Trowbridge, 7 months; Okehampton, 1 month. Longford, 4 month. From India	6
76th	Field Artillery -	7	12	—	—	.28	1714.3	—	—	40.00	14.60	18.52	Colchester, 6 months; Okehampton, 1 month; Aldershot, 5 months.	—
77th	Field Artillery -	134	80	1	—	5.11	597.0	7.46	—	38.13	13.92	23.31	Colchester, 6 months; Okehampton, 1 month; Aldershot, 5 months.	3
78th	Field Artillery -	79	22	—	—	1.07	278.5	—	—	13.52	4.94	17.88	Athlone, 12 months	2
79th	Field Artillery -	101	43	—	2	2.85	425.7	—	19.80	28.22	10.30	24.19	Colchester, 11 months; Okehampton, 1 month.	2
80th	Field Artillery -	148	83	1	2	4.45	628.4	6.75	13.51	30.07	10.97	17.46	Limerick, 64 months; Hilsea, 54 months.	8
4th	Mountain Artillery -	81	83	—	2	3.47	1024.7	—	24.69	42.83	15.63	15.25	Newport, 6 months. From South Africa.	—
10th	Mountain Artillery -	72	52	—	—	1.75	722.2	—	—	24.30	8.87	12.23	Newport, 6 months. To South Africa	—
	Garrison Artillery, Eastern Division	1,920	1,419	11	21	74.35	737.2	5.73	10.94	38.72	14.13	19.12	Various.	—
	Garrison Artillery, Southern Division.	2,514	1,476	14	50	105.94	597.1	5.67	19.80	42.14	15.38	26.20	Various.	—
	Garrison Artillery, Western Division	2,038	1,394	8	30	85.38	684.0	3.92	14.72	41.89	15.29	22.35	Various.	—
	Royal Artillery: District Establishment.	865	233	15	9	14.85	269.3	17.34	10.40	17.17	6.26	23.26	Various.	—

Battery or Bat-	Corps.	Average Annual Strength.	Admitted into Hospital.	Died.	Invalided.	Average Con-stantly Sick.	Ratio per 1,000 of Mean Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year, &c.	Years at Home since last return from Foreign Service.
							Admitted.	Died.	Invalided.	Average Constantly Sick.	days.	days.		
<b>ROYAL ARTILLERY—cont.</b>														
	Royal Artillery: Regimental District Staff.	762	231	5	11		303.1	6.56	14.44	23.62	8.62	28.44	Woolwich.	—
	Royal Artillery, School of Gunnery.	377	106	3	3		281.2	7.95	7.95	13.10	4.78	17.01	Shoeburyness.	—
	Royal Artillery, Various.	612	252	—	16		411.7	—	20.14	41.40	15.14	36.77	Various.	—
	Total Royal Artillery	17,292	12,068	106	276		697.9	6.13	15.96	43.15	15.76	22.58		
<b>ROYAL ENGINEERS.</b>														
	Royal Engineers	4,221	2,075	24	40		491.6	5.68	9.47	28.35	10.35	21.05	Various.	—
<b>FOOT GUARDS.</b>														
1st	Grenadier Guards	739	447	1	9		604.9	1.35	12.17	48.02	17.53	28.53	Windsor, 9 months; London, 3 months	29
2nd	Grenadier Guards	703	883	5	19		1256.1	7.11	27.03	93.71	34.20	27.23	London, 9 months; Dublin, 3 months	2
3rd	Grenadier Guards	675	745	2	22		1103.7	2.96	32.59	89.06	32.52	29.45	London, 12 months	8
1st	Coldstream Guards	677	842	4	23		1243.7	5.91	33.97	90.66	33.09	26.61	London, 9 months; Windsor, 3 months.	8
2nd	Coldstream Guards	598	512	3	22		856.2	5.91	36.79	87.44	24.62	28.76	London, 12 months	11
1st	Scots Guards	668	492	4	9		711.0	5.78	13.00	53.55	19.55	27.49	Dublin, 9 months; London, 3 months	11



Battery or Unit	Corps.	Average Annual Strength.	Admitted into Hospital.	Died.	Invalided.	Average Convalescent Sick.	Ratio per 1,000 of Mean Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year, &c.	Years at Home since last return from Foreign Service.
							Admitted.	Died.	Invalided.	Average Convalescent Sick.				
<b>FOOT GUARDS—cont.</b>														
2nd	Scots Guards	611	516	4	12	37.51	844.5	6.35	19.64	61.22	22.41	26.33	London, 12 months. Detachment at Windsor.	8
	Detachments	831	280	—	—	62.07	336.9	—	—	74.69	27.26	80.91	Various.	—
	Total Foot Guards	5,626	4,717	23	116	399.84	863.6	4.16	30.99	72.35	26.41	30.94		
<b>INFANTRY.</b>														
1st	Royal Scots	599	446	2	9	29.03	744.6	3.34	15.03	48.46	17.69	23.76	York, 12 months	2
1st	Royal West Surrey Regiment	23	17	—	—	85	789.1	—	—	36.96	13.49	18.25	Dover, 1 month. From Malta	—
2nd	East Kent Regiment	606	322	4	11	17.72	631.3	6.60	18.15	29.24	10.67	20.06	Athlone, 10 months; Curragh, 2 months. Detachments at Castle Par and Galway.	7
1st	Royal Lancaster Regiment	663	697	4	19	43.21	1051.3	6.03	28.66	65.17	23.79	22.63	Aldershot, 12 months	12
1st	Northumberland Fusiliers	604	527	3	11	28.76	872.5	4.96	18.21	47.60	17.37	19.91	Dover and Lydd, 8 months; Aldershot, 4 months.	13
1st	Royal Warwickshire Regiment	638	650	4	10	36.37	1018.8	6.27	16.07	56.99	20.81	20.43	Aldershot, 12 months	13
2nd	Royal Fusiliers	707	667	3	6	36.42	943.4	4.24	8.48	51.51	18.90	19.93	Woolwich, 5 months; Alderney and Guernsey, 7 months.	4
2nd	Liverpool Regiment	593	644	5	12	28.73	1088.0	8.43	20.23	48.44	17.68	16.23	Manchester, 12 months. Detachments at Chester, Chipping, and Fleetwood.	1
2nd	Norfolk Regiment	645	451	2	8	26.58	689.2	3.10	12.40	41.21	15.04	21.51	Warley, 7½ months; London, 4½ months.	3
1st	Lincolnshire Regiment	726	625	2	14	35.31	860.9	2.75	19.28	43.63	17.75	20.63	Aldershot, 12 months	16
2nd	Devonshire Regiment	500	513	6	9	25.40	1026.0	12.00	18.00	50.98	18.60	18.13	Devonport, 8 months. Detachments at Cardiff and Newport. From Egypt.	—

Battery or Bat- talion.	Corps.	Average Annual Strength.	Admitted into Hospital.	Died.	Invalided.	Average Con- stantly Sick.	Ratio per 1,000 of Mean Strength.			Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year, &c.	Years at Home since last return from Foreign Service.
							Admitted.	Died.	Invalided.				
INFANTRY—cont.													
1st	Suffolk Regiment	640	510	2	12	26.51	796.9	3.12	18.75	41.42	15.12	Colchester, 12 months	1
1st	West Yorkshire Regiment	590	646	2	15	41.74	1094.9	3.39	25.42	70.74	25.32	Aldershot, 12 months	14
2nd	East Yorkshire Regiment	547	496	1	11	22.97	888.5	1.83	20.11	41.99	16.32	Preston, 12 months. Detachments at Castletown, Chester, Chipping, and Fleetwood.	5
2nd	Bedfordshire Regiment	792	617	4	4	35.30	779.0	5.05	5.06	44.57	16.26	Devonport, 12 months. Detachments at Cardiff and Newport.	1
2nd	Leicestershire Regiment	568	936	1	9	53.11	1617.9	1.76	15.84	98.50	34.13	Chatham and Gravesend, 12 months.	3
1st	Royal Irish Regiment	674	498	4	21	28.29	724.0	5.93	31.15	41.97	15.32	Detachment at Lydd.	8
1st	Yorkshire Regiment	599	723	2	29	36.59	1207.0	3.33	49.41	61.25	22.29	Jersey, 12 months	4
1st	Lancashire Fusiliers	741	537	1	13	35.97	751.7	1.35	17.54	46.54	17.72	Belfast, 5 months; Curragh, 7 months	13
1st	Royal Scots Fusiliers	598	600	4	8	30.60	1063.4	6.68	13.38	51.17	18.68	Shorncliffe, 11 months; Glasgow, 1 month.	12
2nd	Cheshire Regiment	585	1,047	4	12	53.63	1823.9	6.84	20.51	91.67	33.46	Aldershot, 5 months; Sheffield, 7 months.	4
2nd	Royal Welsh Fusiliers	701	707	3	27	42.59	1068.6	4.27	38.51	60.76	22.17	Aldershot, 12 months	13
1st	South Wales Borderers	20	18	—	3	4.33	900.0	—	150.00	216.50	78.52	Aldershot, 1 month. To Egypt	—
2nd	South Wales Borderers	58	53	4	—	2.47	948.3	68.96	—	42.59	15.54	Portsmouth, 1 month. From Aden	—
1st	King's Own Scottish Borderers	588	633	2	14	40.81	1076.5	3.40	23.80	69.40	25.33	Devonport, 12 months	2
1st	Scottish Rifles	720	793	6	9	48.80	1101.4	8.33	12.50	67.78	24.74	Portsmouth, 3 months; Aldershot, 9 months.	12
1st	Royal Inniskilling Fusiliers	568	432	5	9	26.28	760.6	5.28	15.85	46.27	16.89	Dover and Lydd, 12 months	4

Battery or Detachment.	Corps.	Average Annual Strength.	Admitted into Hospital.	Died.	Invalided.	Average Con-stantly Sick.	Ratio per 1,000 of Mean Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year, &c.	Years at Home since last return from Foreign Service.	
							Admitted.	Died.	Invalided.	Average Constantly Sick.					
INFANTRY—cont.															
1st	Gloucestershire Regiment	589	488	2	39	29.47	828.5	3.39	66.21	50.03	18.26	22.04	Aldershot, 12 months. To Malta	14	
2nd	Worcestershire Regiment	638	610	2	19	34.57	956.1	3.13	29.78	54.18	19.78	20.08	Aldershot, 1 month; Curragh, 11 months.	18	
2nd	East Lancashire Regiment	43	31	—	3	1.30	488.4	—	69.77	30.23	11.03	22.59	Mullingar, 21 days. To Gibraltar	13	
2nd	East Surrey Regiment	80	85	—	—	3.86	1062.5	—	—	48.25	17.01	16.53	Tipperary, 2 months. To Malta	8	
2nd	Duke of Cornwall's Light Infantry	641	602	3	13	43.88	1032.8	4.68	20.28	68.45	24.99	24.19	Dublin, 12 months. Detachment at Mullingar.	7	
1st	West Riding Regiment	654	546	3	2	26.59	834.8	4.39	3.06	40.66	14.84	17.77	Bradford, 5 months; Dover and Lydd, 7 months. Detachment at Lichfield.	4	
1st	Border Regiment	619	716	1	10	39.14	1156.7	1.61	16.15	63.23	23.08	19.95	Dover, 5 months; Woolwich, 7 months	3	
1st	Royal Sussex Regiment	704	481	2	6	28.07	683.2	2.94	8.52	39.87	14.55	21.30	Dublin, 9 months; Fermoy, 3 months	8	
2nd	Hampshire Regiment.	571	440	3	9	32.12	770.6	5.25	15.76	56.25	20.53	26.64	Portsmouth, 10 months; Curragh, 2 months.	5	
1st	South Staffordshire Regiment	281	208	3	3	10.98	740.2	10.67	10.67	39.07	14.26	19.27	Bradford, 14 months. Detachment at Lichfield. From Egypt.	—	
2nd	South Staffordshire Regiment	250	165	1	12	9.75	660.0	4.00	46.00	39.00	14.23	21.57	Aldershot, 6 months. To Egypt	13	
2nd	Dorsetshire Regiment	632	445	3	9	23.70	704.1	4.74	14.24	37.50	13.69	19.44	Belfast, 12 months	7	
1st	South Lancashire Regiment	615	283	—	3	11.53	460.2	—	4.88	18.87	6.87	14.93	Birr, 12 months. Detachments at Athlone and Galway.	7	
1st	Welsh Regiment	226	202	—	—	9.31	893.8	—	—	41.10	15.03	16.82	Pembroke Dock, 14 months. From Malta.	—	
2nd	Royal Highlanders	619	509	5	6	18.20	822.3	8.08	9.69	29.54	10.78	13.11	Maryhill, 11 months; Limerick, 1 month.	12	
1st	Oxfordshire Light Infantry	740	423	2	7	22.80	537.5	2.78	9.72	31.67	11.56	10.67	Gosport, 1 month; Kinsale, 11 months	6	

Battalion or Bat-	Corps.	Average Annual Strength.	Admitted into Hospital.	Died.	Invalided.	Average Constancy Sick.	Ratio per 1,000 of Mean Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year, &c.	Years at Home since last return from Foreign Service.
							Admitted.	Died.	Invalided.	Average Constancy Sick.				
INFANTRY—cont.														
1st	Essex Regiment	649	342	4	7	14.54	527.0	6.16	10.79	23.10	8.06	15.80	Ferriby and Buttevant, 12 months	9
1st	Derbyshire Regiment	640	683	—	22	35.93	1067.2	—	34.37	56.14	20.49	19.20	Colchester, 12 months	15
2nd	Loyal North Lancashire Regiment	694	478	2	12	24.89	688.7	2.88	17.29	35.86	15.09	19.03	Enniskillen and Londonderry, 1 month; Mullingar, 11 months.	10
1st	Northamptonshire Regiment	3	—	—	—	.83	—	—	—	—	—	—	—	—
2nd	Northamptonshire Regiment	623	756	3	18	39.98	1213.5	4.81	28.89	64.17	23.42	19.30	Colchester, 12 months	1
2nd	Royal Berkshire Regiment	902	335	2	4	16.06	556.5	3.32	6.64	26.66	9.73	17.40	Portland, 12 months	12
2nd	Royal West Kent Regiment	672	308	1	3	16.85	458.3	1.49	4.46	25.07	9.15	19.09	Shorncliffe, 1 month; Enniskillen and Londonderry, 11 months.	11
1st	Yorkshire Light Infantry	669	586	1	15	30.97	875.9	1.49	22.42	46.29	16.90	19.29	Aldershot and Guernsey, 5 months; Belfast, 7 months.	6
2nd	Shropshire Light Infantry	672	394	3	6	18.70	586.3	4.46	7.44	27.83	10.16	17.32	Cork, 12 months	12
3rd	King's Royal Rifle Corps	592	420	—	10	21.22	709.4	—	16.72	35.84	13.08	18.44	Parkhurst, 12 months	2
4th	King's Royal Rifle Corps	608	599	—	10	39.38	985.2	—	16.45	64.77	23.61	23.99	Gosport, 12 months	1
1st	Wiltshire Regiment	683	624	—	8	26.77	767.2	—	11.71	39.19	14.30	18.65	Aldershot, 7 months; Curragh, 5 months.	11
1st	Manchester Regiment	630	623	—	9	26.41	830.1	—	14.28	41.92	15.30	18.43	Limerick, 12 months	11
2nd	North Staffordshire Regiment	621	747	2	10	42.66	1202.9	3.22	16.10	63.69	25.07	20.84	Portsmouth, 9 months; Dublin, 3 months.	5
1st	York and Lancaster Regiment	691	390	1	9	20.42	564.4	1.45	13.02	29.53	10.80	19.11	Cork, 12 months	9
1st	Durham Light Infantry	665	626	4	21	35.19	941.3	6.01	31.58	52.92	19.31	20.52	Aldershot, 9 months; Buttevant, 3 months.	6

Battery or Bat- talion.	Corps.	Average Annual Strength.	Admitted into Hospital.	Died.	Invalided.	Average Con- stantly Sick.	Ratio per 1,000 of Mean Strength.				Average Time to each Sick Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year, &c.	Years at Home since last return from Foreign Service.
							Admitted.	Died.	Invalided.	Average Consistency Sick.	days.	days.		
<b>INFANTRY—cont.</b>														
1st	Highland Light Infantry	705	614	—	13	34.36	870.9	—	18.44	48.74	17.79	20.43	Aldershot, 12 months	13
1st	Seaforth Highlanders	630	341	5	10	18.28	541.3	7.93	15.87	29.01	10.59	19.57	Pernoy and Tipperary, 12 months	11
2nd	Gordon Highlanders	888	843	2	17	55.57	949.3	2.25	19.14	62.58	22.84	24.06	Dublin, 12 months. Detachment at Curragh.	12
1st	Royal Irish Rifles	618	239	2	3	11.16	386.7	3.23	4.85	18.06	6.59	17.04	Newry and Dundalk, 6½ months; Pernoy, 5½ months.	12
2nd	Royal Irish Fusiliers	647	469	7	10	21.33	724.9	10.82	15.46	32.97	12.03	16.60	Kilkenny, 12 months	9
1st	Connacht Rangers	658	505	6	7	33.93	904.2	9.12	10.64	66.76	24.37	26.96	Pembroke Dock, 7½ months; Ports- mouth, 4½ months.	2
1st	Argyll and Sutherland Highlanders	665	464	2	10	24.52	697.7	3.01	15.04	36.87	13.46	19.29	Edinburgh Castle, 12 months	2
2nd	Leinster Regiment	714	644	5	22	39.26	902.0	7.00	30.81	54.99	20.07	22.25	Aldershot, 12 months	16
1st	Royal Munster Fusiliers	727	793	7	14	53.09	1090.8	9.63	19.23	73.03	26.65	25.70	Dublin, 12 months	10
1st	Royal Dublin Fusiliers	689	433	3	10	21.73	688.4	4.77	16.90	34.54	12.61	18.32	Sheffield and Streusell Camp, 6½ months; Newry and Dundalk, 5½ months.	7
2nd	Rifle Brigade	627	521	3	14	37.17	830.9	4.78	22.33	59.28	21.64	26.04	Dublin and Curragh, 11½ months; Belfast, 1 month.	13
4th	Rifle Brigade	685	645	5	11	39.78	943.1	7.29	16.05	58.07	22.19	22.51	De-vonport, 12 months	3
	Mounted Infantry	185	94	—	—	4.93	548.1	—	—	36.65	9.73	19.14	Aldershot.	—
	Other Infantry	1,212	697	—	61	107.25	575.5	—	50.37	88.56	33.32	50.16	Various.	—
	<b>Total Infantry Regiments</b>	<b>42,479</b>	<b>36,214</b>	<b>176</b>	<b>811</b>	<b>2,066.81</b>	<b>852.5</b>	<b>4.19</b>	<b>19.69</b>	<b>40.36</b>	<b>18.02</b>	<b>21.13</b>		

Battalion or Bat-	Corps.	Average Annual Strength.	Admitted into Hospital.	Died.	Invalided.	Average Constantly Sick.	Ratio per 1,000 of Mean Strength.				Average Time to Sick.	Average Duration of each Case of Sickness.	Stations occupied during the Year, &c.	Years at Home since last return from Foreign Service.
							Admitted.	Died.	Invalided.	Average Constantly Sick.				
REGIMENTAL DEPÔTS.														
Depôt	Royal Scots	134	50	—	2	1.76	373.1	—	14.92	13.28	4.85	12.99	Gloucester	Since formation.
"	Royal West Surrey Regiment	145	166	2	2	5.50	1144.8	13.79	13.79	38.55	13.75	12.29	Guildford	"
"	East Kent Regiment	94	102	—	2	3.42	1085.1	—	21.28	36.38	13.28	12.24	Canterbury	"
"	Royal Lancaster Regiment	185	73	1	1	2.97	374.4	5.13	5.13	15.23	5.56	14.85	Lancaster	"
"	Northumberland Fusiliers	117	79	2	2	3.38	675.2	17.09	17.09	28.89	10.54	15.62	Newcastle-on-Tyne	"
"	Royal Warwickshire Regiment	188	80	1	—	3.19	425.5	5.32	—	16.96	6.19	14.55	Warwick	"
"	Royal Fusiliers	177	81	2	1	2.35	457.6	11.90	5.65	13.28	4.85	10.59	Hounslow	"
"	Liverpool Regiment	138	44	—	—	1.45	318.8	—	—	10.51	3.83	12.02	Warrington	"
"	Norfolk Regiment	156	80	2	2	3.53	512.8	12.82	12.82	22.63	8.26	16.11	Norwich	"
"	Lincolnshire Regiment	124	59	1	1	2.01	475.8	8.06	8.06	16.21	5.92	12.43	Lincoln	"
"	Devonshire Regiment	152	99	1	—	4.10	651.3	6.58	—	26.97	9.85	15.01	Exeter	"
"	Suffolk Regiment	134	78	2	—	3.33	582.1	14.93	—	24.85	9.07	15.63	Bury St. Edmund's	"
"	Somersetshire Light Infantry	83	36	—	—	1.62	409.1	—	—	18.40	6.71	16.42	Taunton	"
"	West Yorkshire Regiment	166	77	2	2	3.94	466.7	12.12	12.12	23.88	8.72	18.08	York	"
"	East Yorkshire Regiment	144	81	2	—	3.43	583.3	13.80	—	23.82	8.69	14.90	Beverley	"
"	Bedfordshire Regiment	120	78	2	1	3.46	650.0	16.97	8.33	28.88	19.52	16.19	Bedford	"

Battery or Btl.	Corps.	Average Annual Strength.	Admitted into Hospital.	Died.	Invalided.	Average Sickness.	Ratio per 1,000 of Mean Strength.			Average Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year, &c.	Years at Home since last return from foreign Service.
							Admitted.	Died.	Invalided.				
	<b>REGIMENTAL DEPOTS—cont.</b>												
Depôt	Leicestershire Regiment	166	84	—	1	3.19	506.0	—	6.08	19.22	13.86	Leicester	—
"	Royal Irish Regiment	159	48	—	—	1.77	301.9	—	—	11.13	13.46	Clonmel	—
"	Yorkshire Regiment	146	32	1	2	1.72	219.2	6.95	13.70	11.78	19.62	Richmond	—
"	Lancashire Fusiliers	151	64	1	1	2.72	423.8	6.62	6.62	18.01	15.51	Bury	—
"	Royal Scots Fusiliers	129	56	1	4	2.57	454.1	7.75	31.01	19.92	16.76	Ayr	—
"	Cheeshire Regiment	136	101	1	—	4.72	742.6	7.36	—	34.70	17.06	Chester	—
"	Royal Welsh Fusiliers	159	87	1	1	3.48	547.2	6.29	6.29	21.89	14.60	Wrexham	—
"	South Wales Borderers	146	139	3	1	4.94	939.2	20.26	6.75	33.37	12.25	Brecon	—
"	King's Own Scottish Borderers	138	138	1	3	4.35	1000.0	7.26	21.74	31.52	11.51	Berwick-on-Tweed	—
"	Scottish Rifles	135	90	—	2	2.10	444.4	—	14.81	15.55	12.77	Hamilton	—
"	Royal Inniskilling Fusiliers	158	86	1	—	3.59	544.3	6.35	—	22.72	15.24	Omagh	—
"	Gloucestershire Regiment	152	200	2	—	7.14	1375.0	13.15	—	46.97	12.46	Horfield	—
"	Worcestershire Regiment	145	89	2	—	2.74	613.8	13.80	—	13.90	11.24	Worcester	—
"	East Lancashire Regiment	214	131	3	4	7.46	612.1	14.02	18.69	34.86	20.78	Burnley	—
"	East Surrey Regiment	218	153	3	3	5.97	701.8	13.76	9.17	27.38	14.87	Kingston-on-Thames	—
"	Duke of Cornwall's Light Infantry	140	132	2	1	3.57	942.8	14.28	7.14	25.50	9.87	Bodmin	—

Battery or Bat- talion.	Corps.	Average Annual Strength.	Admitted into Hospital.	Died.	Invalided.	Average Constantly Sick.	Ratio per 1,000 of Mean Strength.				Average Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year, &c.	Years at Home since last return from Foreign Service.	
							Admitted.	Died.	Invalided.	Average Constantly Sick.					
REGIMENTAL DEPÔTS—cont.															
Depôt	West Riding Regiment	156	95	—	—	5.97	608.9	—	—	38.27	13.97	22.94	Halifax	—	—
"	Border Regiment	123	53	1	3	2.81	430.9	8.13	24.39	22.84	8.34	19.35	Carlisle	—	—
"	Royal Sussex Regiment	198	171	3	—	4.77	863.6	15.15	—	24.09	8.79	10.18	Chichester	—	—
"	Hampshire Regiment	197	125	3	1	4.42	634.5	15.23	5.08	22.44	8.19	13.00	Winchester	—	—
"	South Staffordshire Regiment	245	200	4	—	7.34	816.3	16.33	—	29.96	10.93	13.39	Lichfield	—	—
"	Dorsetshire Regiment	181	167	1	3	3.44	922.6	5.52	16.57	19.01	6.94	7.52	Dorchester	—	—
"	South Lancashire Regiment	154	63	1	—	2.43	409.1	6.50	—	15.78	5.76	14.08	Warrington	—	—
"	Welsh Regiment	159	152	3	3	4.80	965.0	18.86	18.86	30.18	11.01	11.52	Cardiff	—	—
"	Royal Highlanders	128	53	1	2	1.99	414.1	7.81	15.03	15.55	5.67	13.70	Perth	—	—
"	Oxfordshire Light Infantry	116	130	—	—	8.70	1120.7	—	—	75.00	27.37	24.42	Oxford	—	—
"	Essex Regiment	182	105	—	1	4.13	570.9	—	5.40	22.69	8.28	14.36	Warley	—	—
"	Derbyshire Regiment	148	54	1	—	2.27	364.9	6.76	—	15.34	5.60	15.34	Derby	—	—
"	North Lancashire Regiment	144	90	2	1	3.41	625.0	13.89	6.94	23.68	8.64	13.83	Preston	—	—
"	Northamptonshire Regiment	124	78	1	3	3.03	629.0	8.06	24.19	24.44	8.92	14.18	Northampton	—	—
"	Royal Berkshire Regiment	147	97	1	1	4.62	639.8	6.80	6.80	31.43	11.47	17.39	Reading	—	—
"	Royal West Kent Regiment	152	101	1	1	5.26	664.5	6.57	6.57	34.60	12.63	19.00	Maidstone	—	—



Battery or Bn.	Corps.	Average Annual Strength.	Admitted into Hospital.	Died.	Invalided.	Average Con- stantly Sick.	Ratio per 1,000 of Mean Strength.			Average Duration of Sick- ness.	Stations occupied during the Year, &c.		Years at Home since last return from Foreign Service.	
							Admitted.	Died.	Invalided.		Average Time to each Soldier.	days.		Average Time to each Case of Sickness.
REGIMENTAL DEPÔTS— <i>cont.</i>														
Depôt	Yorkshire Light Infantry	140	56	—	—	1.84	400.0	—	—	13.14	4.80	11.98	Pontefract	Since formation.
"	Shropshire Light Infantry	136	37	—	2	1.02	264.7	—	14.70	13.82	5.04	13.94	Shrewsbury	"
"	Middlesex Regiment	251	130	—	2	5.00	517.9	—	7.97	19.92	7.26	14.03	Hounslow	"
"	Wiltshire Regiment	111	103	—	—	3.56	927.9	—	—	32.07	11.71	12.62	Devizes	"
"	Manchester Regiment	237	80	1	1	5.76	337.5	4.22	4.22	24.30	8.87	20.28	Ashton-under-Lyne	"
"	North Staffordshire Regiment	186	111	1	1	3.70	506.8	5.37	5.37	19.89	7.28	12.16	Lichfield	"
"	York and Lancaster Regiment	134	73	—	—	2.84	544.8	—	—	21.19	7.74	14.20	Pontefract	"
"	Durham Light Infantry	148	102	1	2	4.45	680.2	6.76	13.51	30.07	10.97	15.92	Newcastle-on-Tyne	"
"	Highland Light Infantry	146	69	1	2	2.73	472.6	6.85	13.70	18.70	6.83	14.14	Hamilton	"
"	Seaforth Highlanders	98	47	1	1	1.63	479.6	10.20	10.20	16.63	6.07	12.05	Fort George	"
"	Gordon Highlanders	108	24	—	—	.93	222.2	—	—	8.61	3.14	14.14	Aberdeen	"
"	Cameron Highlanders	115	39	—	7	1.28	330.1	—	60.86	11.13	4.06	11.98	Inverness	"
"	Royal Irish Rifles	160	93	3	3	5.32	581.2	19.75	19.75	33.25	12.14	20.88	Belfast	"
"	Royal Irish Fusiliers	162	56	2	2	2.48	345.1	12.35	12.35	15.31	5.39	10.53	Armagh	"
"	Connaught Rangers	135	67	1	2	3.20	406.3	7.41	14.81	24.37	8.90	17.92	Galway	"
"	Argyll and Sutherland Highlanders	112	51	—	3	3.98	453.4	—	26.79	29.70	9.74	21.40	Stirling	"

Battery or Battalion.	Corps.	Average Annual Strength.	Admitted into Hospital.	Died.	Invalided.	Average Con- stantly Sick.	Ratio per 1,000 of Mean Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year, &c.	Years at Home since last return from Foreign Service.	
							Admitted.	Died.	Invalided.	Average Constantly Sick.					
REGIMENTAL DEPÔTS—cont.															
Depôt	Leinster Regiment	170	90	1	2	3'07	529'4	5'88	11'77	18'06	6'59	12'45	Birr	-	Since formation.
"	Royal Munster Fusiliers	189	121	2	3	5'13	640'2	10'58	15'87	27'06	9'91	15'47	Tralee	-	"
"	Royal Dublin Fusiliers	168	76	2	1	3'13	432'4	11'90	5'96	18'63	6'80	15'03	Nias	-	"
"	King's Royal Rifle Corps and Rifle Brigade.	451	484	8	3	18'09	1080'4	17'74	6'70	40'88	14'74	13'64	Winchester	-	"
"	Provisional Battalion	1,078	1,225	—	25	59'71	1138'4	—	23'19	55'39	20'22	17'79	Shorncliffe	-	"
"	Detached	66	9	—	—	.94	136'4	—	—	14'24	5'20	38'20	Various	-	"
Total Regimental Depôts		11,820	7,752	89	119	320'76	665'8	7'53	10'07	27'13	9'90	15'10			
Garrison Staff and Departments		7,005	2,311	36	53	175'63	401'3	5'14	7'56	25'07	9'15	23'80			

ABSTRACT No. XL.—Table, taken from the Reports of the Principal Medical Officers, showing the various Corps which served in the different Foreign Commands during the Year 1893, and some of the most important of their Health Statistics.

Battery, Com- pany, or Batta-	Corps and Commands.	Average Annual Strength.	Admitted into Hospital.	Deaths.			Invalids sent Home.	Average Num- ber Constantly Sick.	Ratio per 1,000 of Strength.			Average Sick Time to each Soldier.	Average Dura- tion of each Case of Sickness.	Stations occupied during the Year.	Com- pleted Years of Service in Com- mand.
				In the Command.	Of Invalids.	Total.			Admitted.	Died.	Invalided.				
GIBRALTAR.															
Royal Artillery.															
3rd	Eastern Division	199	180	—	—	—	4	12.61	653.3	—	20.10	63.87	days.	Gibraltar, 12 months	7
5th	Eastern Division	38	37	—	—	—	—	2.65	973.7	—	—	69.74	26.14	Gibraltar, 12 months. From England, 7th November.	—
6th	Eastern Division	197	138	—	—	—	4	9.26	700.5	—	20.30	47.00	24.49	Gibraltar, 104 months. To England, 18th November.	8
12th	Eastern Division	228	150	—	—	—	4	10.05	657.9	—	17.54	44.08	24.45	Gibraltar, 12 months	7
18th	Eastern Division	210	104	—	1	1	2	7.82	495.2	4.76	9.52	37.24	27.44	Gibraltar, 12 months	7
	District Establishment	121	61	2	—	2	—	4.01	504.1	16.53	—	33.14	23.99	Gibraltar, 12 months	Various.
	Total	963	620	2	1	3	14	46.40	624.4	3.02	14.10	46.73	27.32	Gibraltar, 12 months	Various.
	Royal Engineers	375	169	—	—	—	2	11.18	450.7	—	53.33	20.81	24.15	Gibraltar, 12 months	Various.
Infantry Regiments.															
1st	Somersetshire Light Infantry	667	611	1	1	2	9	39.90	916.0	3.00	13.40	59.82	21.63	Gibraltar, 11 months. To India, 19th December.	2
2nd	East Lancashire Regiment	692	794	3	—	3	6	45.97	1199.4	4.53	9.06	69.44	25.34	Gibraltar, 11 months. From England, 27th January.	1

Battery, Com- pany, or Batta-	Corps and Commands.	Average Annual Strength.	Admitted into Hospital.	Deaths.			Invalids sent Home.	Average Num- ber Constantly Sick.	Ratio per 1,000 of Strength.				Average Sick Time to each Soldier.	Average Dura- tion of each Case.	Stations occupied during the Year.	Com- pleted years of Service in Com- mand.
				In the Command.	Of Invalids.	Total.			Admitted.	Died.	Invalided.	Constantly Sick.	days.	days.		
	<b>GIBRALTAR—cont.</b>															
	<i>Infantry Regiments—cont.</i>															
1st	Royal Highlanders -	79	59	—	—	—	3	3.80	746.8	—	38.01	40.24	17.07	24.07	Gibraltar, 11 months. To Egypt, 26th January.	3
1st	Middlesex Regiment -	820	814	2	—	2	18	57.86	962.7	2.44	21.06	70.55	25.75	25.94	Gibraltar, 12 months -	1
2nd	King's Royal Rifle Corps -	989	647	2	—	2	17	50.14	667.7	2.06	17.54	51.74	18.80	28.29	Gibraltar, 12 months -	2
	Other Corps -	—	—	—	—	—	—	.13	—	—	—	—	—	—	—	
	Total -	3,197	2,925	8	1	9	53	197.88	914.9	2.82	16.58	61.90	22.69	24.60	—	
	<i>Garrison Staff and Departments.</i>															
	Army Service Corps -	54	17	—	—	—	1	1.75	314.8	—	18.52	34.20	11.83	37.87	Various -	Various.
	Medical Staff Corps -	73	41	—	—	—	—	1.73	561.6	—	—	23.70	8.65	18.16	" -	"
	Ordnance Store Corps -	34	5	—	—	—	—	.89	147.0	—	—	17.35	6.33	43.07	" -	"
	Staff, &c. -	17	3	1	—	1	—	.34	176.5	58.82	—	20.00	7.30	41.37	" -	"
	Total -	178	66	1	—	1	1	4.41	370.8	5.02	5.02	24.77	9.04	24.60	—	
	Grand total	4,743	3,780	11	2	13	70	253.87	796.9	2.74	14.76	54.79	20.90	25.09	—	
	<b>MALTA.</b>															
	<i>Royal Artillery.</i>															
2nd	Southern Division -	304	188	—	1	1	10	10.52	453.9	3.29	32.89	34.60	12.63	27.83	Port Tigris and Hutments, 10½ months; Upper St. Elmo and St. James', Cavalier, 1½ months.	2

Battery, Company, or Battalion.	Corps and Commands.	Average Annual Strength.	Admitted into Hospital.	Deaths.			Invalids sent Home.	Average Number Constantly Sick.	Ratio per 1,000 of Strength.				Average Sick Time to each Soldier.	Average Duration of Sickness.	Stations occupied during the Year.	Completed Years of Service in Command.	
				In the Command.	Of Invalids.	Total.			Admitted.	Died.	Invalided.	Constantly Sick.					
MALTA—cont.																	
Royal Artillery—cont.																	
6th	Southern Division	242	143	3	—	3	13	10.30	590.9	12.40	53.72	42.56	15.51	20.29	Fort Ricassoli, 10½ months; Fort Tigne and Hutments, 14 months.	6	
12th	Southern Division	251	142	1	1	2	2	10.13	565.7	7.97	7.97	40.36	14.73	26.04	Upper St. Elmo and St. James' Cavalier, 10½ months; Fort Tigne and Hutments, 14 months.	6	
27th	Southern Division	246	118	1	—	1	4	6.24	479.6	4.06	16.26	25.37	9.26	19.30	Fort Ricassoli, 12 months.	4	
29th	Southern Division	271	181	3	1	4	6	13.09	667.9	14.76	22.14	51.62	19.84	28.21	Fort Tigne and Hutments, 10½ months; Fort Ricassoli, 14 months.	2	
	District Establishment	104	4	—	—	—	—	.29	38.4	—	—	—	2.79	1.02	26.46	St. James' Cavalier, 12 months.	Various.
	Total	1,418	726	8	3	11	35	51.47	511.9	7.76	24.08	36.29	13.25	25.87			
	Royal Engineers.	295	83	—	1	1	4	5.64	281.3	3.39	13.56	19.12	6.96	24.80	St. Francis' Barracks, Floriana, 12 months.	"	
Infantry Regiments.																	
1st	Royal West Surrey Regiment	898	758	3	1	4	24	40.74	904.3	4.77	24.64	59.36	21.66	23.96	Verdala Barracks, 10½ months; Floriana and Notre Dame Barracks, 14 months.	2	
1st	Gloucestershire Regiment	118	188	3	—	3	1	7.06	1583.2	25.42	8.47	59.83	21.54	13.71	Arrived from England, 11th November. Pembroke Camp Barracks, 14 months.	—	
2nd	East Surrey Regiment	540	763	9	—	9	4	38.44	1412.9	16.67	7.41	71.19	25.99	18.30	Arrived from England, 4th March. Pembroke Camp, 7½ months; Isola Gate District, 14 months.	—	
2nd	South Lancashire Regiment	118	57	1	1	2	4	6.27	463.0	16.94	33.90	44.66	16.30	33.75	Isola Gate District, 14 months. Embarked for Egypt, 6th February.	—	

Battery, Com- pany, or Batin.	Corps and Commands.	Average Annual Strength.	Deaths.			Invalids sent Home.	Average Num- ber Constantly Sick.	Ratio per 1,000 of Strength.				Average Sick Time to each Soldier.	Average Jour- ney of each Case.	Stations occupied during the Year.	Com- pleted Years of Service in Com- mand.	
			In the Command.	Of Invalids.	Total.			Admitted.	Died.	Invalids.	Constantly Sick.					
MALTA—cont.																
Infantry Regiments—cont.																
1st	Welsh Regiment	461	376	1	1	2	15	25.02	813.6	4.34	32.54	54.27	19.81	24.39	Florian and Notre Dame Barracks, 10½ months. Embarked for Eng-land, 13th November.	4
1st	Royal Berkshire Regiment	173	141	9	—	9	9	13.70	915.0	52.02	52.02	79.19	28.90	35.46	Lower St. Elmo, 2 months. Embarked for Bermuda, 4th March.	5
1st	North Staffordshire Regiment	681	784	6	—	6	35	47.34	1242.4	9.51	55.47	75.02	27.38	22.04	Arrived from Mauritius, 8th May. Isola Gate District, 7½ months; Verdala Barracks, 1½ months.	—
1st	Cameron Highlanders	936	732	9	2	11	25	50.24	765.7	11.51	26.15	62.55	19.18	25.06	Pembroke Camp, 2 months; Lower St. Elmo, 10 months.	1
2nd	Royal Irish Rifles	992	560	9	4	13	19	37.38	588.2	13.65	19.91	39.47	14.41	24.49	Fort Manoel and Hutments, 12 months.	2
2nd	Connaught Rangers	454	192	2	1	3	9	12.08	422.9	6.00	19.82	27.03	10.19	24.11	Fort Chambray and Gozo, 12 months	4
	Other Corps	11	—	—	—	—	1	.17	—	—	90.91	15.45	5.64	—	—	Various.
	Total	5,232	4,331	52	10	62	146	287.24	896.5	11.80	27.80	54.88	19.96	23.04	—	
Garrison Staff and Departments.																
	Medical Staff Corps	113	58	1	—	1	6	3.59	513.2	8.85	53.10	31.77	11.50	22.59	Valletta, Cottonera, Forrest, Citta Vecchia, and Gozo.	"
	Other Staff and Departmental Corps.	83	15	—	—	—	4	1.07	190.7	—	46.19	23.73	8.68	47.94	Various	"
	Total	196	73	1	—	1	10	5.56	372.4	5.10	51.02	28.37	10.35	27.81	—	
	Grand Total	7,101	5,833	61	14	75	195	349.91	768.7	10.47	27.23	46.86	17.84	23.51	—	

Battery, Com- pany, or Reim.	Corps and Commands.	Average Annual Strength.	Admitted into Hospital.	Deaths.		Invalids sent Home.	Average Num- ber Constantly Sick.	Ratio per 1,000 of Strength.			Average Sick Time to each Soldier.	Average Dura- tion of each Case of Sickness.	Stations occupied during the Year.	Com- pleted Years of Service in Com- mand.
				In the Command.	Of Invalids.	Total.		Admitted.	Died.	Invalids.				
2nd	CYPRUS.										days.	days.		
	Royal Engineers	3	1	—	—	—	—	833.3	—	—	7.30	21.90	Limassol, 8 months; Troodos, 4 months.	Various.
	Infantry Regiments.													
	Connought Rangers	508	339	1	—	1	26	709.5	1.97	51.38	17.44	24.58	Polymedia, 8 months; Troodos, 4 months. Detachment at Nicosia, 6 months.	4
3rd	Garrison Staff and Departments.	41	13	—	—	—	1	317.1	—	24.39	8.99	38.35	Limassol, Polymedia, and Nicosia, 8 months; Troodos, 4 months.	Various.
	Grand Total	550	373	1	—	1	27	678.2	1.88	49.09	16.75	24.70		
	CANADA.													
	Royal Artillery.													
18th 44th	Western Division	935	142	—	1	1	2	423.8	2.98	5.97	7.99	18.61	Halifax, 12 months	3
	Royal Engineers.													
	Company	89	36	—	—	—	—	383.3	—	—	5.13	13.04	Halifax, 12 months	6
	Company	67	37	—	1	1	1	553.3	14.98	14.98	6.93	12.53	Halifax, 12 months	5
	Total	186	72	—	1	1	1	461.5	6.41	6.41	5.90	13.76		

Battery, Com- pany, or Batta-	Average Annual Strength.	Admitted into Hospital.	Deaths.			Invalids sent Home.	Average Num- ber Constantly Sick.	Ratio per 1,000 of Strength.				Average Sick Time to each Soldier.	Average Dura- tion of each Case.	Stations occupied during the Year.	Com- pleted Years of Service in Com- mand.
			In the Command.	Of Invalids.	Total.			Admitted.	Died.	Invalids.	Constantly Sick.				
CANADA—cont.															
Infantry Regiments.															
1st Liverpool Regiment	671	378	—	—	—	11	16.63	563.3	—	16.36	24.63	8.99	15.96	Hallfax, 9 months, arrived from Ber- muda, 23rd March.	—
1st Leicestershire Regiment	209	126	1	—	1	5	5.68	602.8	4.78	23.92	27.18	9.92	16.46	Hallfax, 3 months, left for West Indies, 25th March.	2
Total	880	504	1	—	1	16	22.21	572.7	1.14	18.16	25.24	9.21	16.08		
Garrison Staff and Departments.															
Garrison Staff and Departments.	50	3	—	—	—	—	.15	60.0	—	—	3.00	1.06	18.25		Various.
Grand Total	1,431	731	1	2	3	19	32.12	507.4	2.11	13.37	22.60	8.25	16.26		
BERMUDA.															
Royal Artillery.															
1st Western Division	274	136	2	—	2	—	6.78	496.3	7.30	—	24.56	8.96	18.05	St. George's, 12 months. Detach- ments at Prospect and Ireland Island.	3
Royal Engineers.															
27th Company	71	36	1	—	1	—	2.14	507.0	14.06	—	30.14	11.00	21.70	St. George's, 12 months. Detachments at Ireland Island.	6
36th Company	94	20	2	—	2	1	1.13	212.8	21.27	10.64	12.02	4.39	20.62	Prospect, 12 months. Detachments at Roaz.	3
Total	165	56	3	—	3	1	3.27	339.4	18.16	6.06	19.81	7.23	21.31		



Battery, Com- pany, or Batta-	Corps and Commands.	Average Annual Strength.	Admitted into Hospital.	Deaths. In the Command. Or Invalids.	Total.	Invalids sent Home.	Average Num- ber Constantly Sick.	Ratio per 1,000 of Strength.				Average Sick Time to each Soldier.	Average Dura- tion of Sickness.	Stations occupied during the Year.	Com- pleted Years of Service in Com- mand.	
	BERMUDA—cont. <i>Infantry Regiment.</i>											days.	days.			
1st	Liverpool Regiment	186	69	1	—	1	4	4'00	370'9	5'37	21'50	21'50	7'85	21'16	Prospect, 3 months. To Halifax, 20th March. Detachments at George's and Ireland Island.	2
1st	Royal Berkshire Regiment	698	360	6	—	6	—	20'87	515'7	8'60	—	22'90	10'91	21'16	Prospect, 9 months. From Malta, 19th March. Detachments at St. George's and Ireland Island.	—
	Total	884	429	7	—	7	4	24'87	465'3	7'92	4'52	23'13	10'37	21'14		
	Garrison Staff and Departments.															
	Army Service Corps	10	2	—	—	—	—	'07	200'0	—	—	7'00	2'55	13'77	Various	Various.
	Medical Staff Corps	21	5	—	—	—	—	'06	238'1	—	—	3'81	1'40	5'84	"	"
	Ordnance Store Corps	30	14	—	—	—	1	'77	466'6	—	—	33'23	25'66	9'36	"	"
	Garrison Staff	6	—	—	—	—	—	—	—	—	—	—	—	—	"	"
	Total	67	21	—	—	—	1	'92	313'4	—	14'83	13'73	5'01	15'99		
	Grand Total	1,390	642	12	—	12	6	35'70	461'9	8'63	4'32	25'75	9'39	20'35		
	WEST INDIES. (BARBADOS, &c.) <i>Royal Artillery.</i>															
18th	Western Division	106	169	1	—	1	7	9'43	1500'0	9'43	62'04	88'86	32'47	21'65	St. Lucia and Barbados, 12 months	2

Battery, Com- pany, or Batin.	Corps and Commands.	Average Annual Strength.	Admitted into Hospital.	In the Command.	Deaths.	Invalids sent Home.	Average Num- ber Constantly Sick.	Ratio per 1,000 of Strength.	Average Sick Time to each Soldier.	Average Dura- tion of each Case of Sickness.	Stations occupied during the Year.	Com- pleted Years of Service in Com- mand.
				Of Invalids.	Total.			Admitted.	Died.	Invalids.	Constantly Sick.	
	<b>WEST INDIES—cont.</b>											
	(BARBADOS, &c.)—cont.											
	<i>Royal Artillery</i> —cont.											
	District Staff, &c.	19	32	—	—	—	2.74	1084.2	—	—	144.21	days.
	St. Lucia Company	2	2	—	—	—	.09	1000.0	—	—	52.64	31.25
	Total	127	193	1	1	7	12.26	1519.7	7.87	55.12	16.42	16.42
											St. Lucia, 12 months	Various.
											Barbados, 12 months	2
	<i>Royal Engineers.</i>											
	Royal Engineers	10	3	—	—	—	.07	300.0	—	—	7.00	2.56
	West India Fortress Company	7	7	—	—	—	.12	1000.0	—	—	17.14	6.26
	Total	17	10	—	—	—	.19	588.2	—	—	11.18	4.08
											St. Lucia and Barbados, 12 months	Various.
											St. Lucia, 12 months	3
	<i>Infantry Regiments.</i>											
2nd	West Riding Regiment	133	171	—	—	7	14.53	1285.7	—	52.63	100.25	39.88
											St. Lucia and Barbados, 3 months.	2
											To South Africa and St. Helena,	
											on 8th and 10th April respectively.	
1st	Leicestershire Regiment	452	557	—	—	8	38.06	1398.6	—	17.70	84.20	30.73
											St. Lucia and Barbados, 9 months.	—
											From Halifax, Nova Scotia, 9th	
											April.	
	West India Regiment	5	—	—	—	—	—	—	—	—	St. Lucia and Barbados, 12 months	Various.
	Total	590	758	—	—	15	52.59	1984.7	—	25.42	89.14	32.53
												25.32

Battery, Com-pany, or Batta-	Corps and Commands.	Average Annual Strength.	Admitted into Hospital.	Deaths.			Invalids sent Home.	Average Num-ber Constantly Sick.	Ratio per 1,000 of Strength.				Average Sick Time to each Soldier.	Average Duration of Sickness.	Stations occupied during the Year.	Com-pleted years of Service in Com-mand.
				In the Command.	Of Invalids.	Total.			Admitted.	Died.	Invalided.	Constantly Sick.				
	WEST INDIES—cont. (BARBADOS, &c.)—cont. <i>Garrison Staff and Departments.</i>	27	10	—	—	—	—	47	370.3	—	—	17.41	days. 6.35	days. 17.16	St. Lucia and Barbados, 12 months.	Various.
	Total, Barbados, &c.	761	971	1	—	1	23	65.61	1375.9	1.31	28.91	98.08	31.48	24.68		
	(JAMAICA.) <i>Royal Artillery.</i>															
10th	Western Division	109	111	3	—	3	4	5.54	1015.3	27.53	36.69	53.58	19.55	19.20	Detachments at Up Park Camp, New-castle, and Port Royal, 12 months.	3
	District Staff	2	—	—	—	—	—	—	—	—	—	—	—	—		Various.
	Total	111	111	3	—	3	4	5.54	1000.0	27.03	36.04	53.61	19.20	19.20		
	<i>Royal Engineers.</i>															
Det.	Royal Engineers	26	15	1	—	1	—	1.02	419.6	27.77	—	23.33	10.34	24.52	Detachments at Up Park Camp, New-castle, and Port Royal, 12 months.	..
	<i>Infantry Regiments.</i>															
2nd	West Riding Regiment	73	49	—	—	—	2	3.76	671.2	—	27.40	61.37	18.75	27.03	Newcastle, 9 months. Left for South Africa, 3rd April.	2
1st	Leicestershire Regiment	235	140	2	—	2	—	6.54	595.7	8.51	—	29.11	10.62	17.83	Newcastle, 9 months. Arrived from Halifax, 2nd April.	—
2nd	West India Regiment	8	4	—	—	—	—	4.16	500.0	—	—	20.00	7.30	14.40	Up Park Camp, 12 months	1
2nd	South Staffordshire Regiment	—	1	—	—	—	—	.08	—	—	—	—	—	—		
	Total	316	194	2	—	2	2	10.53	618.9	6.55	6.33	34.37	13.51	20.37		

Battery, Com- pany, or Batta-	Corps and Commands.	Average Annual Strength.	Admitted into Hospital.	Deaths.			Invalide sent Home.	Average Num- ber Constantly Sick.	Ratio per 1,000 of Strength.			Average Sick Time to each Soldier.	Average Dur- ation of each Case of Sickness.	Stations occupied during the Year.	Com- pleted Years of Service. in Com- mand.
				In the Command.	Of Invalide.	Total.			Admitted.	Died.	Invalide.	Constantly Sick.			
	WEST INDIES—cont. (JAMAICA)—cont. <i>Depot, West India Regiment</i>	5	1	—	—	—	—	.02	200.0	—	—	4.00	days. 7.30	Up Park Camp, 12 months	5
	<i>Garrison Staff and Departments.</i>	32	18	1	—	1	—	1.42	562.5	31.25	—	44.37	22.80	Various.	Various.
	Total, Jamaica -	500	389	7	—	7	6	19.13	678.0	14.00	12.00	38.26	20.60		
	Grand Total, West Indies	1,261	1,310	8	—	8	28	84.64	1,038.8	6.34	23.20	67.12	23.58		
	SOUTH AFRICA AND ST. HELENA. <i>Cavalry.</i>														
3rd	Dragoon Guards -	403	563	2	—	2	21	29.10	1,142.0	4.06	43.00	59.08	18.87	Pietermaritzburg, 18 months	1
11th	Hussars -	5	1	—	—	—	—	.03	200.0	—	—	4.00	7.30	Pietermaritzburg, 13 months	3
	Total	408	564	2	—	2	21	29.12	1,132.5	4.02	42.17	58.47	18.86		
	<i>Royal Artillery.</i>														
4th	Mountain Battery -	86	94	—	—	—	6	5.96	1,063.0	—	69.77	60.30	23.13	Pietermaritzburg, 64 months. To England, 18th May.	8
10th	Mountain Battery -	79	108	—	—	—	—	6.42	1,367.1	—	—	81.27	23.66	Pietermaritzburg, 64 months. From England, 18th July.	—
8th	Southern Division -	171	188	1	—	1	—	10.16	1,009.4	5.86	—	59.42	19.73	Cape Town, 13 months	6

Battery, Com- pany, or Batta-	Corps and Commands.	Average Annual Strength.	Admitted into Hospital.	Deaths.		Inval- ids sent Home.	Average Num- ber Constantly Sick.	Ratio per 1,000 of Strength.			Average Sick Time to each Soldier.	Average Dura- tion of each Case of Sickness.	Stations occupied during the Year.	Com- pleted Years of Service in Com- mand.		
				In the Command.	Of Inval- ids.			Total.	Admitted.	Died.					Invalided.	Constantly Sick.
SOUTH AFRICA AND ST. HELENA—cont.																
Royal Artillery—cont.																
	St. Helena Detachment	78	65	1	—	1	6	3.99	807.7	12.82	76.93	51.15	18.87	23.12	St. Helena, 12 months	4
	District Establishment	56	11	—	—	—	—	1.13	198.4	—	—	20.18	7.37	37.50	Cape Town and Simonstown, 12 months.	Various.
	Total	470	464	2	—	2	12	27.66	987.2	4.26	25.53	58.85	21.46	21.76		
Royal Engineers.																
20th	Company	106	63	1	—	1	2	3.43	594.3	9.45	18.87	32.36	11.81	10.57	Cape Town, 12 months. Detach- ments at various stations.	7
Infantry Regiments.																
1st	East Yorkshire Regiment	237	186	2	—	2	10	15.72	784.8	8.44	42.19	66.33	24.21	30.85	Wynberg, 4 months. To Egypt, 6th May. Detachment at St. Helena and Simonstown.	5
Det. 1st	Royal Highlanders	321	302	—	—	—	4	10.53	940.8	—	12.46	60.84	22.21	23.60	Cape Town, 9 months. From Egypt, 6th April.	—
Det. 1st	North Staffordshire Regiment	112	106	1	—	1	9	9.70	964.3	8.93	30.36	86.61	31.61	32.78	Cape Town, 3 months. To Malta, 9th April.	3
2nd	West Riding Regiment	506	443	—	—	—	6	28.62	875.5	—	11.86	53.56	20.64	23.69	Wynberg, 8 months. From West Indies, 1st May. Detachments at St. Helena and Simonstown.	—
2nd	York and Lancaster Regiment	801	746	7	—	7	13	39.46	881.3	8.74	16.23	49.26	17.08	19.31	Pietermaritzburg, 12 months. De- tachments at Eshowe.	2
	Total	1,977	1,785	10	—	10	48	118.03	902.9	5.06	21.24	57.17	20.87	23.11		

Battery, Com- pany, or Batta-	Corps and Commands.	Average Annual Strength.	Admitted into Hospital.	Deaths.		Invalids sent Home.	Average Num- ber Constantly Sick.	Ratio per 1,000 of Strength.				Average Sick Time to each Soldier.	Average Dura- tion of each Case of Sickness.	Stations occupied during the Year.	Com- pleted Years of Service in Com- mand.
				In the Command.	Of Invalids.			Total.	Admitted.	Died.	Invalided.				
SOUTH AFRICA AND ST. HELENA—cont.															
Garrison Staff and Depart- ments.															
	Army Service Corps	34	13	1	—	1	·73	382·3	29·41	—	21·47	7·84	20·50	Various stations	Various.
	Ordnance Store Corps	39	15	—	—	—	·50	384·6	—	—	12·82	4·68	12·17	"	"
	Medical Staff Corps	72	24	1	—	1	1·45	333·3	13·89	13·89	20·14	7·35	22·05	"	"
	Garrison Staff	18	2	—	—	—	·29	111·1	—	—	55·55	16·11	52·92	"	"
	Total	163	54	2	—	2	2·97	331·3	12·27	12·27	18·22	6·65	20·08	"	"
	Grand Total	3,214	2,930	17	—	17	176·21	911·6	5·29	24·58	54·83	20·01	21·95	"	"
MAURITIUS.															
Royal Artillery.															
23rd	Southern Division	85	290	4	1	5	8·54	2705·9	58·82	435·29	100·47	36·67	13·57	Port Louis and Curepipe, 12 months	2
	District Staff	3	2	1	—	1	·23	—	—	—	—	—	—	Port Louis and Curepipe, 12 months	Various.
	Total	88	292	5	1	6	8·77	2636·3	68·18	431·82	99·66	36·38	13·80	"	"
	Royal Engineers	18	38	1	—	1	1·48	2111·1	55·55	555·55	79·44	39·00	13·74	Port Louis and Curepipe, 12 months	"
Infantry Regiments.															
1st	Royal Highlanders	332	469	—	1	1	23·43	1412·6	3·01	78·31	70·57	25·76	18·23	From Egypt, 22nd March. Port Louis and Curepipe, 9½ months.	—

Battery, Com- pany, or Batta-	Corps and Commands.	Average Annual Strength.	Admitted into Hospital.	In the Command.	Deaths. Of Invalids.	Total. Invalids.	Invalids sent Home.	Average Num- ber Constantly Sick.	Ratio per 1,000 of Strength.				Average Sick Time to each Soldier.	Average Dura- tion of Sickness.	Stations occupied during the Year.	Com- pleted Years of Service in Com- mand.
	<b>MAURITIUS—cont.</b>															
1st	<i>Infantry Regiments—cont.</i> North Staffordshire Regiment	94	245	1	—	1	6	7.19	2906.3	10.64	63.63	76.49	27.92	10.71	To Malta, 28rd March. Port Louis and Curepipe, 21 months.	2
	Total . . .	426	714	1	1	2	32	30.62	1676.7	4.70	75.12	71.88	36.24	15.65		
	<i>Garrison Staff and Departments.</i>	19	17	1	—	1	2	.47	894.7	52.63	105.26	24.74	9.08	10.09	Port Louis and Curepipe, 12 months	Various.
	Grand Total	551	1,001	8	2	10	82	41.29	1816.7	18.14	148.82	74.94	37.35	15.06		
	<b>Ceylon.</b>															
16th	<i>Royal Artillery.</i> Southern Division	87	54	—	—	—	—	2.18	620.7	—	—	25.06	9.15	14.74	Trincomali, 12 months	1
16th	Southern Division	118	113	3	—	3	3	6.60	987.6	25.42	25.42	55.93	20.42	21.32	Colombo, 12 months	7
	District Establishment	55	16	2	—	2	—	.88	240.9	36.36	—	16.00	5.84	20.07	Colombo and Trincomali, 12 months	Various.
	Total . . .	260	183	5	—	5	3	9.66	703.8	19.23	11.54	37.15	13.56	19.26		
	<i>Royal Engineers</i>	70	39	1	—	1	2	2.55	557.1	14.29	28.57	36.45	13.29	23.86	Colombo and Trincomali, 12 months	"
1st	<i>Infantry Regiment.</i> Royal Warwickshire Regi- ment.	1,065	984	4	—	4	14	57.05	877.0	3.76	13.14	53.56	10.55	22.29	Colombo, 12 months. Detachments at Kandy and Trincomali.	1

Battery, Com- pany, or Batta-	Average Annual Strength.	Admitted into Hospital.	Deaths.			Invalids sent Home.	Average Num- ber Constantly Sick.	Ratio per 1,000 of Strength.				Average Sick Time to each Soldier.	Average Dura- tion of each Case of Sickness.	Stations occupied during the Year.	Com- pleted Years of Service in Com- mand.
			In the Command.	Of Invalids.	Total.			Admitted.	Died.	Invalids.	Constantly Sick.				
Ceylon—cont. <i>Garrison Staff and Departments.</i> Grand Total	41	4	—	—	—	—	·08	97·6	—	—	1·95	days. ·71	days. 7·30	Various stations	Various.
	1,436	1,160	10	—	10	19	69·34	807·8	6·96	13·23	48·29	17·63	21·82		
CHINA. <i>Royal Artillery.</i> 25th Southern Division	170	269	1	1	2	6	15·58	1602·8	11·17	33·53	87·04	31·77	21·00	Hong Kong, 12 months	"
	55	37	—	—	—	2	3·10	673·7	—	36·36	56·36	30·57	30·58	Hong Kong, 13 months	"
	234	306	1	1	2	8	18·68	1307·7	8·55	34·19	79·83	29·14	22·28		
<i>Royal Engineers</i> <i>Infantry Regiments.</i> 1st Shropshire Light Infantry	158	131	3	—	3	3	6·01	823·1	18·99	18·99	38·04	13·88	18·99	Hong Kong, 12 months	"
	984	1,568	12	—	12	14	90·73	1583·5	12·19	14·23	92·21	33·65	21·12	Hong Kong, 12 months	2
	88	10	1	—	1	—	·55	263·1	26·32	—	14·47	5·28	20·07	Hong Kong, 12 months	Various.
	1,414	2,015	17	1	18	25	116·97	1425·0	12·73	17·68	93·01	20·98	21·00		
STRAITS SETTLEMENTS. <i>Royal Artillery.</i> 25th Southern Division	234	227	—	—	—	3	14·29	970·1	—	12·82	61·07	22·20	22·06	Port Canning, Blakin Mati, and out- lying Ports, 12 months.	4



Battery, Com- pany, or Batta-	Corps and Commands.	Average Annual Strength.	Admitted into Hospital.	In the Command.	Of Invalids.	Total. Invalids.	Invalids sent Home.	Average Num- ber Constantly Sick.	Ratio per 1,000 of Strength.	Admitted.	Died.	Invalided.	Constantly Sick.	Average Time to each Soldier.	Average Dura- tion of each Attack.	Stations occupied during the Year.	Com- pleted Years of Service in Com- mand.
STRAITS SETTLEMENTS—cont.																	
	<i>Royal Engineers</i>	85	51	—	—	—	—	2.10	600.0	—	—	—	24.70	9.02	15.03	Pulo Brani and Tanglin, 12 months -	Various.
	<i>Infantry.</i>																
2d	Lincolnshire Regiment	871	774	3	1	4	9	53.78	868.6	4.59	10.53	61.74	23.54	25.86		Tanglin, Fort Canning, and Penang, 12 months.	1
	<i>Garrison Staff and Departments.</i>																
	Grand total	1,223	1,064	3	1	4	13	71.19	870.0	3.27	10.63	53.21	21.28	24.46		Tanglin, Fort Canning, and Penang, 12 months.	Various.
	<i>Expt.</i>																
	<i>'Casualty.</i>																
1st	Dragon Guards	38	28	—	—	—	—	1.20	736.8	—	—	—	33.96	12.39	16.82	Abassiye, 3 months. To England, 28th March.	2
7th	Dragon Guards	369	408	2	—	2	10	29.96	1349.6	5.42	27.10	81.19	29.64	21.96		From India, 9th March. Abassiye, 10 months.	—
	Total	407	526	2	—	2	10	31.25	1392.4	4.91	24.57	76.78	28.02	21.68			
	<i>Royal Artillery.</i>																
32d	—	139	195	3	—	3	—	12.17	1402.9	21.63	—	—	87.55	31.96	22.78	From England, 26th March. Abbas- siye, 9 months.	—
104b	Eastern Division	130	93	1	—	1	3	6.00	715.4	7.69	23.06	46.15	16.95	23.55		Cairo and Alexandria, 12 months -	8
	Total	269	288	4	—	4	3	18.17	1070.6	14.81	11.15	67.54	24.65	23.03			

Battery, Com- pany, or Batta-	Corps and Commands.	Average Annual Strength.	Admitted into Hospital.	Deaths.			Invalids sent Home.	Average Num- ber Constantly Sick.	Ratio per 1,000 of Strength.				Average Sick Time to each Soldier.	Average Dura- tion of each Case of Sickness.	Stations occupied during the Year.	Com- pleted Years of Service in Com- mand.
				In the Command.	Of Invalids.	Total.			Admitted.	Died.	Invalids.	Constantly Sick.				
24th	Egypt—cont. <i>Royal Engineers.</i>	109	68	1	—	1	3	3.76	623.8	9.17	27.52	34.50	12.59	20.18	Cairo and Alexandria, 12 months	Various.
				—	—	—	—	.09	—	—	—	—	—	32.85		
1st	<i>Foot Guards.</i>	—	1	—	—	—	—	—	—	—	—	—	—	—	To India, 30th March	2
				—	—	—	—	—	—	—	—	—	—	—		
1st	<i>Infantry Regiments.</i>	—	8	—	—	—	1	.46	—	—	—	—	—	20.99	From India, 27th January	Abassi-
2nd	Devonshire Regiment	66	87	—	—	—	1	5.53	1318.2	—	15.15	83.79	30.58	23.20	Yeh, 3 months. To England, 26th	March.
1st	Devonshire Regiment	—	—	—	—	—	—	—	—	—	—	—	—	—	From the Cape, 1st June. Alexan-	—
1st	East Yorkshire Regiment	539	981	7	—	7	12	57.99	1764.4	12.99	22.26	107.53	39.27	22.25	dra, 7 months	—
1st	South Wales Borderers	842	1,159	11	—	11	8	76.70	1376.5	13.06	9.50	91.09	33.25	24.15	Cairo, 13 months	1
1st	South Staffordshire Regiment	225	181	1	—	1	2	13.35	804.4	4.44	8.88	54.88	20.03	24.90	Alexandria, 5 months. To England,	2
2nd	South Staffordshire Regiment	753	1,053	8	—	8	4	61.63	1371.8	10.63	5.31	81.84	30.01	21.87	31st May.	—
1st	Dorsetshire Regiment	540	678	11	—	11	12	41.28	1255.5	20.37	22.22	76.44	27.90	22.22	From England, 4th March. Cairo,	—
2nd	South Lancashire Regiment	560	1,371	13	—	13	11	86.77	1504.2	16.12	19.79	100.89	36.83	23.10	Cairo, 9 months; Alexandria, 6 days.	4
1st	Royal Highlanders	61	100	2	—	2	—	4.06	1680.3	32.79	—	66.56	24.29	14.63	From Malta, 12th September. Ab- siveh, 104 months.	—
2nd	Connaught Rangers	—	4	—	—	—	—	.44	—	—	—	—	—	40.15	From Gibraltar, 5th February. Ab- bassiveh, 1 month. To Cape, 4th March.	—
															Men awaiting passage to England from Cyprus.	—

Battery, Com- pany, or Batta-	Corps and Commands.	Average Annual Strength.	Admitted into Hospital.	Deaths.			Invalids sent Home.	Average Num- ber Constantly Sick.	Ratio per 1,000 of Strength.				Average Sick Time to each Soldier.	Average Dura- tion of each Case of Sickness.	Stations occupied during the Year.	Com- pleted Year of Service in Com- mand.
				In the Command	Of Invalids.	Total.			Admitted.	Died.	Invalids.	Constantly Sick.				
	<i>EGYPT—cont.</i>															
	<i>Infantry Regiments—cont.</i>															
	Mounted Infantry -	194	165	3	—	3	—	8.35	1250.0	24.19	—	67.34	days. 24.58	days. 19.66	Abbassiyeh, 12 months -	Various.
	Total Infantry -	4,010	5,727	56	—	56	51	355.56	1422.2	15.96	12.72	88.67	32.36	23.66		
	<i>Garrison Staff and Departments.</i>															
	Army Service Corps -	57	29	2	—	2	—	1.45	508.8	35.09	—	25.44	9.23	13.25	Cairo, Abbassiyeh, and Alexandria, 12 months.	
	Ordnance Store Corps -	43	21	1	—	1	1	1.86	488.4	23.26	23.26	43.26	15.79	32.33	Cairo and Alexandria, 12 months -	
	Medical Staff Corps -	92	70	1	—	1	3	3.33	760.9	10.87	32.60	36.20	13.21	17.36	Cairo, Abbassiyeh, and Alexandria, 12 months.	
	Military Police -	74	20	1	—	1	—	1.17	270.3	13.51	—	15.81	5.77	21.35	Cairo, Abbassiyeh, and Alexandria, 12 months.	
	General Staff and Army Pay Corps.	12	3	—	1	1	1	.51	250.0	83.33	83.33	48.50	15.51	62.05	Cairo and Alexandria, 12 months -	
	Total -	278	143	5	1	6	5	8.32	514.4	21.68	17.96	22.93	10.92	21.24		
	Grand Total -	5,073	6,763	68	1	69	72	417.15	1851.2	13.60	14.19	82.33	30.01	22.55		

ABSTRACT No. XLI.—TABLE, taken from the REPORT of the PRINCIPAL MEDICAL OFFICER, showing the ADMISSIONS, MORTALITY, and INVALIDING in each CORPS serving in the BENGAL COMMAND during the Year 1893.

Corps.	Average Annual Strength.	Admitted into Hospital.	Deaths in the Command.	Invalided.	Average Number Sick.	Ratio per 1,000 of Strength.				Average Time to each Soldier.	Average Duration of each Case of Sickiness.	Stations occupied during the Year.	Years of Service in India.
						Admissions into Hos- pital.	Deaths.	Invalids.	Constantly Sick.				
CAVALRY.													
2nd Dragon Guards	682	964	17	16	70.32	1450.2	25.68	24.17	106.22	38.77	29.63	Rawal Pindi, 10½ months; marching, 1½ months -	8 0
5th "	107	186	6	—	8.65	1733.3	56.07	—	80.94	29.51	16.97	Meerut, 2½ months (arrived from England on 11th October 1893).	0 2½
7th "	61	42	—	1	1.73	683.5	—	16.39	28.36	10.35	15.03	Meerut, 1 month; Muttra, ½ month; marching, ½ month (left for Deolali on 16th February 1893).	9 0½
8th Lancers	610	880	8	14	43.50	1442.6	13.11	22.96	71.31	36.63	18.04	Meerut, 1½ months; Muttra, ½ month; marching, ½ month.	5 0
11th Hussars	561	809	15	—	47.30	1442.1	26.74	—	84.31	30.77	21.24	Rawal Pindi, 1½ months; Sialkot, 8½ months; marching, 2½ months.	1 1
16th Lancers	598	685	11	25	57.90	1145.5	16.39	41.81	86.82	35.34	30.85	Lucknow, 10½ months; marching, 1½ months -	3 3
18th Hussars	604	800	12	23	49.77	1324.5	19.87	36.48	82.40	30.08	22.71	Umballa, 12 months -	4 0½
Total	3,963	4,366	69	78	279.17	1363.1	21.54	24.35	87.16	31.81	23.34		
ARTILLERY.													
A Battery, R.H.A.	159	197	2	8	10.76	1239.0	12.58	50.31	67.80	24.75	19.97	Meerut, 10½ months; Umballa, ½ month; march- ing, 1½ months.	4 2
B "	164	228	1	3	13.98	1480.5	6.49	19.48	90.78	33.13	22.38	Rawal Pindi, 10½ months; Campbellpore, ½ months; Nowahera, ½ months; marching, ½ month.	4 2

Corps.	Average Annual Strength.	Admitted into Hospital.	Deaths in the Command.	Invalided.	Average Number Constantly Sick.	Ratio per 1,000 of Strength.				Average Time to each Sick.	Average Duration of each Case of Sickness.	Stations occupied during the Year.	Years of Service in India.
						Admissions into Hospital.	Deaths.	Invalids.	Constantly Sick.				
ARTILLERY—cont.													
C Battery, R.H.A.	153	216	2	5	18.50	1411.8	13.07	32.68	51.70	29.82	21.12	Umballa, 10½ months; Meerut, ½ month; marching, 1 month.	37½ mo.
H "	151	192	1	5	9.24	1271.5	6.62	33.11	61.19	23.94	17.57	Umballa, 9 months; marching, 3 months.	4 2
K "	148	170	—	11	11.86	1148.6	—	74.38	80.14	29.25	25.46	Lucknow, 10½ months; marching, 1½ months.	3 2
N "	28	55	—	—	2.16	1064.3	—	—	77.14	28.16	14.53	Meerut, 1½ months; marching, 1 month (arrived from Mohow on 17th October 1893).	8 1½
Q "	144	183	2	4	11.19	1270.8	13.89	27.78	77.71	28.36	22.32	Sialkot, 8½ months; marching, 3½ months.	13 0
T "	129	171	3	2	9.55	1325.6	23.26	15.50	74.03	27.02	20.38	Meerut, 9½ months (left for England on 29th October 1893).	14 11
2nd Field Battery, R.A.	152	154	2	4	9.65	1013.5	13.16	26.82	63.49	23.17	22.87	Lucknow, 11 months; marching, 1 month.	12 11½
6th "	143	203	1	5	10.51	1419.6	6.99	34.97	73.50	26.83	18.90	Saugor and Practice Camp, 12 months.	2 2
8th "	152	277	3	7	12.43	1822.4	19.74	46.05	81.78	29.85	16.98	Perozepore, 10½ months; marching, 1½ months.	12 11½
9th "	152	171	1	3	11.26	1125.0	6.58	19.74	74.08	27.04	24.03	Agra, 11 months; marching, 1 month.	10 2
10th "	147	344	2	2	13.51	2340.1	13.61	13.61	91.90	33.55	14.33	Multan, 9 months; marching, 3 months.	9 2
15th "	146	205	1	5	12.36	1815.1	6.85	34.25	84.66	30.90	17.02	Rawal Pindi, 1½ months; Campbellpore, 10 months; marching, ½ month.	6 0
24th "	157	215	3	6	13.96	1369.4	19.11	38.23	88.92	32.45	23.70	Jhansi, 9½ months; marching, 2½ months.	3 2
31st "	132	170	3	3	13.53	1118.4	19.74	19.74	89.01	32.49	23.05	Cawnpore, 10½ months; Lucknow, ½ month; marching, ½ month.	5 2
34th "	153	189	3	2	15.16	1255.3	19.61	13.07	90.06	36.17	29.28	Allahabad, 10 months; marching, 2 months.	3 2
39th "	147	326	4	7	14.38	2217.7	27.21	47.03	97.82	35.71	16.10	Mian Mir and Practice Camp, 1½ months; marching, ½ month.	12 11½

Corps.	Average Annual Strength.	Admitted into Hospital.	Deaths in the Command.	Invalided.	Average Number Constantly Sick.	Ratio per 1,000 of Strength.				Average Time to Sick.	Average Duration of each Case of Sickness.	Stations occupied during the Year.	Years of Service in India.
						Ratio per 1,000 of Strength.							
						Admissions into Hospital.	Deaths.	Invalids.	Constantly Sick.				
ARTILLERY—cont.													
43rd Field Battery, R.A.	161	208	3	6	10.31	1291.9	18.03	37.27	64.04	23.37	18.06	Barrackpore, 12 months	13 0
44th "	146	157	4	6	12.35	1062.8	27.59	41.38	56.17	31.09	28.71	Jubulpore, 9½ months; marching, 2 months (left for Neemuch on 27th December 1893).	13 0
46th "	150	143	1	4	9.45	953.3	6.67	26.67	65.00	23.00	24.12	Lucknow, 1½ months; Fyzabad, 9½ months; marching, 1½ months.	3 2
46th "	150	296	1	4	17.01	1006.7	6.67	26.67	113.40	41.89	21.71	Bareilly, 1½ months; marching, ½ month	6 2
50th "	143	320	4	2	15.99	2287.8	27.97	13.99	111.82	40.81	18.24	Peshawar, 11 months; Campbellpore, ½ month; marching, ½ month.	7 0
51st "	146	189	2	4	10.75	1277.0	13.51	27.03	72.64	26.51	20.76	Meerut, 1½ months; marching, ½ month	3 2
54th "	151	236	1	3	12.82	1563.9	6.03	19.87	84.90	30.99	19.83	Nowroong, 8½ months; Allahabad, 1½ months; marching, 2 months.	3 2
60th "	153	213	1	—	13.15	1385.6	6.54	—	85.95	31.37	22.64	Rawal Pindi, 11 months; Campbellpore, ½ month; marching, ½ month.	7 0
65th "	146	342	5	9	14.64	2310.8	33.78	60.81	98.92	36.11	15.63	Mian Mir and Practice Camp, 12 months (left for Neemuch on 31st December 1893).	13 0
68th "	153	300	4	3	11.11	1265.8	25.33	18.99	70.32	25.67	20.28	Jullundur, 9½ months; marching, 2½ months	12 1½
70th "	131	297	2	5	15.78	2454.5	16.53	41.32	150.41	47.60	19.39	Dinapore, 10½ months; marching, 1½ months	7 1½
71st "	147	136	2	2	7.66	925.2	13.61	13.61	53.11	19.02	20.56	Meerut, 1½ months; marching, ½ month	6 0
No. 1 Battery, R.M.A.	104	97	1	1	4.65	832.7	9.63	9.63	44.71	16.32	17.50	Umballa, ½ month; Jutogh, 7 months; marching, 4½ months.	10 2
" 2	103	103	1	2	6.29	1000.0	9.71	19.42	61.07	22.29	22.29	Umballa, ½ month; Jutogh, 7 months; marching, 4½ months.	7 11
" 3	101	103	1	—	6.76	1019.8	9.90	—	66.93	24.43	23.96	Rawal Pindi, 5½ months; Bars Gali, 5½ months; marching, 1 month.	15 1
" 5	84	181	2	3	6.64	2154.8	23.81	35.71	79.05	28.85	13.39	Quetta, 10½ months (Kheilat Field, 1½ months, from 11th April to 24th May).	15 1

Corps.	Average Annual Strength.	Admitted into Hospital.	Deaths in the Command.	Invalided.	Average Number Constantly Sick.	Ratio per 1,000 of Strength.				Average Time to each Sick Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year.	Years of Service in India.
						Admissions into Hos- pital.	Deaths.	Invalids.	Constantly Sick.				
ARTILLERY—cont.													
No. 6 Battery, R.M.A..	96	116	—	1	8'98	1197'9	—	10'42	93'54	34'14	28'50	Darjeeling and Practice Camp, 11 months; marching, 1 month.	8 3
" 8 "	94	84	2	3	5'60	893'6	21'82	31'91	59'57	21'74	24'33	Rawal Pindi, 5½ months; Kalabagh, 5½ months; marching, 1 month.	6 2
" 9 "	86	124	—	1	5'53	1441'9	—	11'63	64'30	23'47	16'28	Rawal Pindi, 5½ months; Khayra Gali, 6 months; marching, ½ month.	9 3
No. 1 Co., Eastern Div., R.A..	117	317	2	6	12'06	1854'7	17'09	51'28	103'08	37'63	20'29	Perozepore, 13 months; Dett. Amritsar, 12 months.	5 0½
" 8 "	110	136	3	1	7'66	1236'4	27'27	9'09	69'64	25'42	20'56	Fort Allahabad, 1½ months; marching, ½ months	6 2
" 13 "	104	221	—	6	11'77	2125'0	—	57'69	113'17	41'31	19'44	Rawal Pindi, 6½ months; Fort Attock, 2 months; Thobba, 3 months; marching, ½ month.	7 1½
" 15 "	118	91	3	4	6'25	771'2	25'42	33'90	53'97	19'33	25'07	Roorkee, 13 months; Dett. Chakrata, 6 months	12 3
" 23 "	76	156	4	—	6'47	2053'6	52'63	—	55'13	31'07	15'14	Multan, 8½ months; marching, 1½ months (arrived from Mhow on 28th February 1893).	12 3
" 23 "	89	120	—	1	9'45	1348'3	—	11'34	106'18	38'76	28'74	Jhansi, 12 months	9 2
No. 6 Co., Southern Div., R.A..	103	197	6	1	8'15	1912'6	48'25	9'71	79'13	28'88	15'10	Rawal Pindi, 8½ months; Fort Attock, ½ month; Thobba, 3 months; Dett. Fort Attock, 9 months.	6 2
" 7 "	111	131	—	2	7'67	1180'2	—	18'02	69'10	25'22	21'37	Roorkee, 13 months	8 1½
" 11 "	115	231	3	3	13'20	2006'7	26'09	23'09	106'09	38'72	19'23	Delhi, 12 months	4 1½
" 21 "	124	143	1	3	12'36	1153'2	8'06	24'19	99'68	36'38	31'55	Calcutta and Practice Camps, 12 months	4 1½
" 22 "	90	125	2	—	7'00	1398'9	22'32	—	77'78	23'39	20'44	Rawal Pindi, 1½ months; Campbellpore, 9½ months; marching, ½ month.	6 3
" 24 "	120	175	4	1	11'53	1458'3	33'33	8'33	96'08	35'07	24'05	Agra, 9½ months; Quetta, 2 months; marching, ½ month.	10 2

Corps.	Average Annual Strength.	Admitted into Hospital.	Deaths in the Command.	Invalided.	Average Number Constantly Sick.	Ratio per 1,000 of Strength.				Average Time to each Sick.	Average Duration of each Case of Sickness.	Stations occupied during the Year.	Years of Service in India.
						Admissions into Hospital.	Deaths.	Invalids.	Constantly Sick.				
ARTILLERY—cont.													
No. 5 Co., Western Div., R.A.	133	311	3	6	18.66	2346.1	22.73	45.45	141.36	51.60	21.90	Barrackpore and Practice Camps, 12 months	1 2
" 12 "	107	193	1	2	7.97	1177.6	9.35	18.69	74.49	27.19	23.09	Roorkee and Practice Camp, 12 months	14 0
" 16 "	110	213	2	5	7.82	1836.4	18.18	45.45	71.09	25.35	13.40	Quetta, 10 months; Agra, 14 months (marching by rail, 1 month).	6 2
" 20 "	122	197	2	5	9.19	1614.8	16.39	40.98	75.33	27.49	17.03	Quetta, 12 months	8 2
Total	6,758	10,049	107	187	559.69	1487.0	15.83	27.67	82.82	30.23	20.33		
H. Coy. Royal Engineers	42	14	—	2	.67	333.3	—	47.62	15.95	5.82	17.47	Roorkee, 12 months; Dett. Calcutta, 12 months	23 0
INFANTRY.													
2nd R.W. Surrey Regiment	998	1,275	6	31	106.53	1700.9	6.48	33.48	115.04	41.90	24.60	Dinapore, 11½ months (left for England on 19th December 1893); Dett., Guathong, 11 months; Jullundur, 84 months; marching, 3½ months; Dett. Bhagsu, 6 months.	15 94
1st East Kent Regiment	845	1,403	17	29	76.42	1640.4	20.12	34.32	90.44	33.01	19.88	Peshawar, 54 months; Cherat, 54 months; marching, 1 month; Wing, Benares, 2 months; Dett. Peshawar, 5 months.	6 9
2nd Northumberland Fusiliers	968	2,172	32	15	101.17	2243.8	33.06	15.50	104.51	38.15	17.00	Quetta, 24 months (left for Karachi on 7th March 1893).	13 11
1st Royal London Fusiliers	160	127	1	8	8.09	793.8	6.25	50.00	50.56	18.46	23.25	Marching, 4 months (arrived from Rangoon on 14th December 1893).	5 11½
1st Norfolk Regiment	38	176	—	—	4.33	5500.0	—	—	135.31	49.39	8.98	Mian Mir, 1½ months; Rawal Pindi, 4 months; Thobbs, 5½ months; marching, 1 month (Head Quarters, arrived from Karachi on 27th January 1893); Draft, Rawal Pindi, 2 months (arrived from Karachi in 1892).	9 10
1st Devonshire Regt.	1,072	1,289	22	2	81.27	1202.4	20.52	1.87	75.81	27.67	23.01		1 0



Corps.	Average Annual Strength.	Admitted into Hospital.	Deaths in the Command.	Invalided.	Average Number Constantly Sick.	Ratio per 1,000 of Strength.				Average Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year.	Years of Service in India.
						Ratio per 1,000 of Strength.							
						Admissions into Hos- pital.	Deaths.	Invalids.	Constantly Sick.				
INFANTRY—cont.													
2nd West Yorkshire Regiment	840	1,236	7	27	87.08	1471.4	8.33	32.14	104.38	38.10	25.89	Lucknow, 14 months; Sitapur, 84 months; marching, 1 month (left for Bangalore on 20th November 1893); Wing, Benares, 104 months; Rawal Pindi, 54 months; Kuldaus, 6 months; marching, 4 months; Lucknow, 12 months; Dett. Chakrata, 6 months -	15 2
1st Bedfordshire Regiment	1,039	954	7	12	73.96	918.2	6.74	11.55	71.18	25.98	28.30	Lucknow, 12 months; Dett. Chakrata, 6 months -	3 0
2nd Royal Irish Regiment	881	1,195	9	48	97.96	1356.4	10.22	54.48	111.19	40.59	29.92	Lucknow, 12 months; Dett. Chakrata, 6 months -	8 11
2nd Royal Scots Fusiliers	851	2,229	15	35	104.80	2430.1	17.03	39.73	119.06	43.46	17.18	Lucknow, 12 months; Dett. Chakrata, 6 months -	11 11
1st Royal Welsh Fusiliers	955	1,855	18	11	94.02	1942.4	18.53	11.52	99.39	36.28	18.68	Lucknow, 12 months; Dett. Chakrata, 6 months -	13 34
2nd King's Own Scottish Borderers.	905	2,194	24	34	91.42	2273.6	24.37	35.23	94.74	34.58	15.21	Lucknow, 12 months; Dett. Chakrata, 6 months -	3 114
2nd Scottish Rifles	880	1,474	7	37	105.02	1488.9	7.07	37.37	106.08	38.72	26.01	Lucknow, 12 months; Dett. Chakrata, 6 months -	14 14
1st East Lancashire Regiment	859	1,426	4	71	126.55	1586.2	4.45	78.98	140.77	51.38	32.39	Lucknow, 12 months; Dett. Chakrata, 6 months -	13 0
1st East Surrey	980	1,632	22	37	115.39	1085.7	22.45	37.76	117.74	42.98	25.49	Lucknow, 12 months; Dett. Chakrata, 6 months -	8 114
1st Duke of Cornwall's Light Infantry.	85	151	—	—	8.29	1776.5	—	—	97.53	35.60	20.04	Lucknow, 12 months; Dett. Chakrata, 6 months -	6 10
2nd Border Regiment	901	1,464	10	28	86.03	1624.9	11.10	28.96	95.46	54.85	21.45	Lucknow, 12 months; Dett. Chakrata, 6 months -	3 10
2nd Royal Sussex Regiment	880	1,640	23	43	96.03	1763.4	24.73	45.16	103.26	37.69	21.37	Lucknow, 12 months; Dett. Chakrata, 6 months -	8 0
1st Hampshire	986	1,106	7	29	88.40	1144.9	7.25	30.02	91.51	33.40	23.17	Lucknow, 12 months; Dett. Chakrata, 6 months -	7 11
2nd Oxfordshire Light Infantry	768	1,146	2	16	80.82	1492.2	2.60	20.83	105.23	38.41	25.74	Lucknow, 12 months; Dett. Chakrata, 6 months -	7 9
2nd Essex Regiment	948	1,229	11	13	81.89	1296.4	11.60	13.71	86.38	31.53	24.32	Lucknow, 12 months; Dett. Chakrata, 6 months -	1 2

Corps.	Average Annual Strength.	Admitted into Hospital.	Deaths in the Command.	Invalided.	Average Number Constantly Sick.	Ratio per 1,000 of Strength.				Average Time to each Sick.	Average Duration of each Case of Sickness.	Stations occupied during the Year.	Years of Service in India.
						Admissions into Hos- pital.	Deaths.	Invalids.	Constantly Sick.				
INFANTRY—cont.													
2nd Derbyshire Regiment	973	1,059	14	21	68.53	1088.4	14.39	31.53	70.74	25.82	23.72	Umballa, 12 months; Wing, Solon, 6 months; Dett. Dagshai, 6 months.	11 2
1st Royal West Kent Regt.	988	1,506	14	9	82.61	1523.3	14.17	9.11	86.66	31.63	30.76	Meerut, 12 months; Dett. Delhi, 9½ months; Chakrata, 9 months.	1 11
2nd Middlesex Regiment	839	1,811	14	18	90.57	2158.5	16.69	21.45	107.96	39.40	18.25	Quetta, 10½ months (Khelat Field, 1½ months, from 11th April to 24th May).	13 4
1st King's Royal Rifle Corps	1,096	1,182	4	12	63.64	1068.4	3.68	11.06	58.60	21.39	19.65	Rawal Pindi, 5½ months; Camp Gharial, 6½ months; marching, ½ month.	3 0
2nd Wiltshire Regiment	801	1,122	12	23	74.48	1400.7	14.98	28.71	92.96	33.94	24.23	Jhansi, 10 months (left for Mandalay on 2nd No- vember 1893); Wing, Nowgong, 10 months; Dett. Sipri, 9½ months.	11 11
2nd Manchester Regiment	1,017	1,457	7	30	86.23	1432.0	6.88	29.50	84.78	30.94	21.60	Meerut, 2½ months; Chakrata, 7½ months; Dina- pore, ½ month; marching, 1½ months; Dett. Delhi, 2½ months.	11 2
2nd Highland Light Infantry	1,027	1,693	10	27	80.87	1064.3	9.74	26.20	78.74	28.74	27.01	Lucknow, 2 months; Fyzabad, 9½ months; march- ing, ½ month; Dett. Chakrata, 6 months.	9 3
2nd Seaforth Highlanders	1,022	1,625	9	10	77.07	1690.0	8.81	9.78	75.41	27.62	17.31	Rawal Pindi, 1½ months; Ferozepore, 10 months; marching, ½ month; Dett. Dalhousie, 12 months.	14 9
1st Gordon Highlanders	919	973	10	11	63.67	1063.8	10.88	11.97	69.28	25.29	23.88	Umballa, 4½ months; Sabathu, 7 months; march- ½ month; Dett. Jutogh, 10 months.	1 11½
1st Royal Irish Fusiliers	972	1,194	7	24	99.04	1639.9	7.20	24.69	101.89	37.19	22.68	Allahabad, 12 months; Dett. Fort Allahabad, 12 months.	10 2
2nd Argyll and Sutherland Highlanders.	1,057	976	10	10	83.78	923.4	9.46	9.46	79.26	28.93	31.33	Umballa, 4½ months; Dagshai, 7½ months; march- ing, ½ month; Dett. Dagshai, 4½ months.	2 0
2nd Royal Munster Fusiliers	1,002	1,304	11	21	81.49	1201.6	10.98	20.96	81.33	29.68	24.70	Lucknow, 1½ months; Cawnpore, 10½ months; Dett. Fateelgarh, 12 months; Ranikhet, 6½ months.	9 9
2nd Royal Dublin	740	1,944	20	17	91.25	2237.0	27.03	23.97	123.98	45.00	17.13	Quetta, 9½ months (arrived from Karachi on 16th March 1893).	7 10

Corps.	Average Annual Strength.	Admitted into Hospital.	Deaths in the Command.	Invalided.	Average Number Constantly Sick.	Ratio per 1,000 of Strength.				Average Time to each Sick Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year.	Years of Service in India.
						Admissions into Hospital.	Deaths.	Invalids.	Constantly Sick.				
INFANTRY—cont.													
1st Rifle Brigade	1,042	1,060	6	17	83.70	1046.1	5.76	16.31	80.33	29.32	28.03	Calcutta, 12 months; Detl. Dum Dum, 54 months	13 34
3rd "	997	1,191	19	11	72.63	1321.6	19.65	11.38	75.11	27.41	22.26	Peshawar, 12 months; Cherat, 54 months	4 10
Total	31,483	47,519	411	784	2919.89	1509.4	13.05	24.90	92.74	33.86	22.45		
Garrison Staff and Departments.	1,446	1,167	28	70	136.18	807.1	17.98	48.41	94.18	34.37	42.39	Various station hospitals.	
Men of various Corps, marching.	69	27	6	—	1.40	291.3	86.96	—	20.29	7.41	18.93	Various station hospitals.	
Grand Total	43,001	63,142	619	1,121	3397.00	1468.4	14.40	26.07	90.63	33.06	22.53		

ABSTRACT No. XLII.—TABLE, taken from the REPORT of the PRINCIPAL MEDICAL OFFICER, showing the ADMISSIONS, MORTALITY, and INVALIDING in each CORPS serving in the MADRAS COMMAND during the Year 1893.

Corps.	Average Annual Strength.	Admitted into Hospital.	Deaths in the Command.	Invalided.	Average Number Constantly Sick.	Ratio per 1,000 of Strength.				Average Time to Sick to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year.	Years of Service in India.	
						Admissions into Hos- pital.	Deaths.	Invalids.	Constantly Sick.					
CAVALRY.														
19th Hussars	-	871	4	14	77.41	1238.07	7.08	24.56	135.81	40.57	32.44	Bangalore -	-	12 2 3
21st "	-	675	5	21	38.84	1211.85	8.98	37.70	60.75	22.17	18.30	Secunderabad -	-	12 6 0
Detach Cavalry	-	11	-	2	1.95	1545.45	-	181.81	177.37	55.41	42.32			
Total	-	1,553	9	37	115.20	1373.46	7.91	38.51	99.47	36.31	26.43			
ROYAL ARTILLERY.														
M. Bt., Royal Horse Artillery	153	165	1	3	11.85	1078.43	6.53	19.61	77.45	28.27	26.21	Secunderabad -	-	12 7 11
S. " "	149	177	1	2	13.36	1187.92	6.71	13.48	89.66	32.73	27.55	Bangalore -	-	12 8 0
6th Field Bt., Royal Artillery	163	216	1	6	13.01	1333.33	6.17	37.03	80.30	39.31	21.98	St. Thomas Mount -	-	12 10 0
19th "	130	115	3	1	6.23	894.61	23.07	7.69	47.84	17.46	19.74	Bangalore and Bellary; left for England 22nd October 1893 -	-	10 13 0
21st "	142	175	1	1	13.68	1232.39	7.04	7.04	97.32	33.53	28.83	Bangalore -	-	12 8 0
23rd "	147	160	-	4	15.82	1068.43	-	11.27.21	104.23	38.04	34.95	Bangalore -	-	12 2 3
29th "	31	35	-	-	1.55	1129.03	-	-	50.00	18.25	16.16	Belgaum -	-	2 0 2

Corps.	Average Annual Strength.	Admitted into Hospital.	Deaths in the Command.	Invalided.	Average Number Constantly Sick.	Ratio per 1,000 of Strength.				Average Duration of each Case of Sickness.	Stations occupied during the Year.	Years of Service in India.
						Admissions into Hos- pital.	Deaths.	Invalids.	Constantly Sick.			
ROYAL ARTILLERY—cont.										days.	months, yrs. mo.	
33rd Field Bty., Royal Artillery	145	199	2	1	13.71	1372.41	13.79	6.99	94.55	34.51	Secunderabad -	13 2
42nd "	168	271	1	10	18.31	1613.09	5.96	59.52	108.98	39.78	St. Thomas Mount -	12 7 0
46th "	29	41	—	—	1.81	1413.79	—	—	62.41	23.78	Bellary; arrived from England 25th October 1893	2 0 2
46th "	142	125	4	3	8.56	880.28	28.17	21.12	60.28	22.00	Secunderabad -	12 3 2
76th "	135	92	—	4	7.00	681.48	—	29.63	51.65	18.92	Belgaum; left for England 23rd October 1893	13 10
No. 4 Co., Eastern Div., R.A.	106	113	2	6	11.98	1467.14	19.05	87.14	114.09	41.64	Rangoon -	12 5 0
No. 13 " Western "	94	55	2	—	2.89	585.10	21.27	—	30.74	11.63	Secunderabad -	12 14 0
No. 9 " Southern "	115	163	—	5	12.52	1417.39	—	43.48	108.87	39.73	Port St. George -	12 6 0
No. 18 " " "	107	162	—	2	10.40	1514.02	—	18.69	97.19	35.46	Thayetmyo, 8; Rangoon, 4	12 4 0
No. 7 " Mountain "	87	150	—	8	13.13	1724.14	—	91.95	150.92	55.08	Mandalay -	12 7 0
Details Royal Artillery	39	46	—	1	4.17	1179.48	—	25.64	106.92	39.03		
Total	2,060	2,500	18	57	179.61	1901.92	8.65	27.40	86.35	31.91		
ROYAL ENGINEERS.												
H. Company, Royal Engineers	45	23	—	—	1.09	547.63	—	—	25.95	9.47	Bangalore -	12 18 0

Corps.	Average Annual Strength.	Admitted into Hospital.	Deaths in the Command.	Invalided.	Average Number Constantly Sick.	Ratio per 1,000 of Strength.				Average to Sick Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year.	Years of Service in India.
						Admissions into Hospital.	Deaths.	Invalids.	Constantly Sick.				
INFANTRY REGIMENTS.													
2nd Bn. Royal Scots Fusiliers -	1,047	1,068	9	12	73.04	1039.16	8.29	11.46	69.76	25.46	24.50	Wellington Dett. at Cannanore, Calicut, and Malapuram	13
1st Bn. Norfolk Regiment -	770	1,036	11	27	81.50	1345.45	14.29	35.06	105.94	38.63	28.71	Rangoon; left for Bengal 8th December 1893, Dett. at Port Blair	10
2nd Bn. Suffolk Regiment -	992	854	8	30	69.09	960.89	8.96	20.16	69.65	25.42	29.53	Secunderabad	10
2nd Bn. Somersetshire L. I. -	935	1,333	14	23	86.35	1479.14	14.97	29.96	92.35	33.71	22.79	Port St. George and Wing at Bellary	15
2nd West Yorkshire Regiment	56	110	—	—	4.37	1964.29	—	—	76.25	27.83	14.17	Rangoon; arrived 6th December 1893	1
2nd Bn. Yorkshire Regiment -	800	1,139	9	17	68.49	1423.75	11.25	21.25	78.11	28.51	20.01	Shwabo Dett. at Bhamo and Bernardmyo	13
1st Bn. Cheshire Regiment -	794	738	3	14	55.37	929.47	3.78	17.63	69.61	25.41	27.34	Belgaum	13
2nd Bn. Royal Inniskilling Fus.	975	1,415	11	16	81.37	1461.28	11.28	16.41	83.46	30.46	20.99	Thayetmyo; Dett. at Meiktila	5
1st Bn. Duke of Corn. L. I. -	674	1,154	10	23	81.96	1712.16	14.94	34.12	121.45	44.33	25.89	Mandalay; left for Bengal 17th November 1893	10
1st Bn. Dorsetshire Regiment -	178	204	—	—	8.66	1146.07	—	—	43.65	17.76	15.49	Wellington; arrived 18th October 1893; Dett. at Cannanore, Calicut, and Malapuram	3
2nd Bn. Welsh Regiment -	897	1,038	5	10	75.37	1179.49	5.68	11.15	84.02	30.67	26.00	Secunderabad	13
1st Bn. Northamptonshire Regiment.	966	1,075	4	10	68.23	1112.83	4.14	10.35	70.63	25.78	23.17	Bangalore	1
2nd Bn. Wiltshire Regiment -	110	229	2	—	9.87	2031.81	8.18	—	89.72	32.75	15.73	Mandalay; arrived 16th November 1893	13
Details Infantry Regiments -	160	138	3	28	15.36	862.50	12.50	175.00	98.00	35.04	40.63		0
Total -	9,354	11,621	83	206	772.73	1242.36	9.41	21.91	83.61	30.15	24.27		13

Corps.	Average Annual Strength.	Admitted into Hospital.	Deaths in the Command.	Invalided.	Average Number Constantly Sick.	Ratio per 1,000 of Strength.					Average Time to Sick Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year.	Years of Service in India.
						Admissions into Hospital.	Deaths.	Invalids.	Constantly Sick.					
CONVALESCENT DEPTS.														
Poonamallee	115	173	1	28	22.44	1504.34	8.09	243.46	198.13	71.23	47.34			
Wellington	388	484	2	21	38.57	1247.42	5.15	54.12	94.25	34.40	27.53			
Total	503	657	3	49	59.01	1306.16	5.96	97.41	117.32	42.82	33.78			
Garrison Staff and Departments.	232	85	7	2	9.15	366.38	30.17	8.63	39.44	14.39	39.29			
Grand Total	13,349	16,449	125	350	1134.79	1233.25	9.36	26.23	85.01	31.03	25.18			

ABSTRACT No. XLIII.—TABLE, taken from the REPORT of the PRINCIPAL MEDICAL OFFICER, showing the ADMISSIONS, MORTALITY, and INVALIDING in each CORPS serving in the BOMBAY COMMAND during the Year 1893.

Corps.	Average Annual Strength.	Admitted into Hospital.	Died.	Invalids sent Home.	Average Number Constantly Sick.	Ratio per 1,000 of Strength.				Average Duration of each Case of Sickness.	Stations occupied during the Year.	Completed Years in the Command.	
						Admitted.	Died.	Invalided.	Constantly Sick.				
CAVALRY.													
7th Hussars	625	895	4	24	58.48	1432.0	6.40	38.40	93.47	34.12	23.63	7	
Cavalry various	41	53	1	—	1.09	1292.7	24.39	—	26.59	9.70	7.50		
Total	666	948	5	24	59.51	1423.4	7.51	38.04	89.35	33.61	23.91		
ROYAL ARTILLERY.													
I. Bty., Royal Horse Artillery	29	38	—	—	1.70	1310.3	—	—	53.62	21.39	16.33	1	
L. "	166	201	2	1	10.19	1212.2	12.13	6.06	61.76	22.54	18.50	1	
N. "	119	121	2	6	6.39	1016.8	16.61	50.48	53.70	19.60	19.28	8	
17th Field Battery, R.A.	141	413	2	1	16.29	2929.1	14.18	7.09	115.53	42.17	14.40	10	
20th "	124	134	1	—	9.64	1060.6	8.06	—	77.74	23.8	26.38	15	
22nd "	138	214	3	1	10.86	1550.7	21.74	7.25	78.70	23.72	18.52	7	
26th "	135	96	3	2	4.99	711.1	22.22	14.81	36.30	13.49	18.97	10	
27th "	138	177	1	4	8.42	1383.6	7.25	23.99	61.01	22.27	17.36	6	
36th "	123	221	9	9	14.34	2224.6	73.17	73.17	116.99	43.55	18.03	5	



Corps.	Average Annual Strength.	Admitted into Hospital.	Died.	Invalids sent Home.	Average Number Constantly Sick.	Ratio per 1,000 of Strength.			Constantly Sick.	Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year.		Completed Years of Service in the Command.
						Admitted.	Died.	Invalided.						
ROYAL ARTILLERY—cont.														
36th Field Battery, R.A.	135	145	1	5	7.23	1074.1	7.41	37.04	53.56	days, 19.56	days, 18.20	Kirkee, 12 months	-	6
40th "	28	34	-	-	1.57	1214.3	-	-	56.07	30.47	10.85	Ahmednagar, 2 months, arrived from England 25th October.	-	1½
47th "	156	359	2	6	15.19	2301.3	12.82	38.46	97.38	35.54	15.44	Karachi, 12 months	-	2
53rd "	144	267	-	9	8.91	1854.2	-	62.50	61.87	22.58	12.18	Hyderabad, 12 months	-	7
55th "	125	270	2	6	12.10	2100.0	16.00	48.00	96.90	35.33	16.36	Deesa, 12 months	-	5
59th "	133	343	1	4	14.59	2578.9	7.52	30.08	109.70	40.04	15.53	Neemuch, 11½ months, proceeded to Nowgong 20th December.	-	9
72nd "	164	160	-	2	9.12	1039.0	-	12.99	59.22	21.62	20.80	Kirkee, 12 months	-	5
14th Bty., Eastern Div., R.A.	128	124	2	3	8.07	968.7	15.62	23.44	63.05	23.01	23.75	Bombay, 12 months	-	13
21st "	122	114	1	3	6.26	854.4	8.20	24.59	51.31	18.73	20.04	Bombay, 12 months	-	12
22nd "	3	2	-	-	.13	666.6	-	-	43.33	15.82	23.72	Mhow, 2 weeks, proceeded to Multan 13th January	-	12
3rd Bty., Southern Div., R.A.	127	113	1	2	5.47	889.8	7.87	15.75	43.07	15.72	17.67	Karachi, 11 months	-	12
20th "	121	120	2	6	7.51	1068.1	16.53	49.59	62.07	23.65	21.24	Bombay, 12 months	-	14
2nd Bty., Western Div., R.A.	126	140	-	2	6.10	1111.1	-	15.87	48.41	17.67	15.90	Aden, 12 months	-	14
6th "	114	141	5	4	6.65	1236.8	43.86	35.09	58.53	21.29	17.21	Aden, 12 months	-	14
11th "	112	126	2	4	6.03	1125.0	17.46	35.71	59.11	21.57	19.18	Aden, 12 months	-	6
Royal Artillery various	199	322	3	5	12.30	1618.1	15.06	25.13	61.81	23.56	13.94	-	-	-
Total	3,039	4,464	45	85	210.64	1,468.9	14.81	27.97	69.31	23.30	17.22	-	-	-

Corps.	Average Annual Strength.	Admitted into Hospital.	Died.	Invalids sent Home.	Average Number Constantly Sick.	Ratio per 1,000 of Strength.				Average Time to each Sick Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year.	Completed Years of Service in the Command.
						Admitted.	Died.	Invalided.	Constantly Sick.				
ROYAL ENGINEERS.										days.	days.		
Sub-Marine Mining Co. -	33	68	1	1	1.41	2,060.6	-	30.30	42.73	15.60	7.57	Kirkee, Bombay (Butcher's Island), and Aden -	1
INFANTRY.													
2nd Royal Lancaster Regt. -	915	987	6	10	56.12	1069.6	6.56	10.93	61.33	23.39	20.55	Almudnagar and Dett. Salara, 12 months; Dett. Nasirabad and Neemuch, 3 months.	14
1st Royal Fusiliers -	747	1,366	5	1	55.09	1833.6	6.69	1.34	73.75	26.92	14.72	Karachi and Dett. Hyderabad, 10 months, arrived from Quetta 10th March.	6
2nd Lancashire Fusiliers -	1,015	1,160	11	11	80.22	1142.9	18.84	10.84	79.03	28.86	25.24	Poonah and Dett. Kirkee, 12 months -	13
2nd South Wales Borderers -	418	821	3	19	30.67	1964.1	7.18	45.45	73.87	26.78	13.64	Aden, 10 months, proceeded to England, 27th October.	13
2nd Gloucestershire Regiment	841	1,280	9	11	60.20	1462.5	10.70	13.06	71.58	26.12	17.85	Nasirabad and Dett. Neemuch, 9½ months; Aden, 2½ months.	13
1st Worcestershire Regiment	875	1,152	5	16	81.82	1316.6	5.71	18.20	93.51	33.98	25.73	Poonah, 1 month; Kamptee and Dett. Sitabuldi, 11 months.	15
1st Royal N. Lanc. Regiment	983	1,683	6	32	82.79	1960.0	6.80	36.24	93.77	34.22	17.96	Poonah, 1 month; Bombay and Dett. Deolali, 11 months.	9
2nd Yorkshire Light Infantry	785	1,065	13	12	57.15	1356.7	16.56	15.29	72.80	26.57	19.59	Poonah, 12 months -	7
2nd Durham Light Infantry	889	1,148	4	13	68.84	1291.3	4.50	14.62	77.44	28.26	21.89	Mhow and Dett. Indore, 12 months -	7
1st Leinster Regiment -	844	1,270	6	18	69.91	1428.6	7.11	21.33	70.98	25.91	17.22	Deesa and Dett. Ahmedabad, 12 months -	16

Corps.	Average Annual Strength.	Admitted into Hospital.	Died.	Invalids sent Home.	Average Number Constantly Sick.	Ratio per 1,000 of Strength.				Average Time to each Sick Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year.	Completed Years of Service in the Command.
						Admitted.	Died.	Invalided.	Constantly Sick.				
INFANTRY—cont. 2nd Royal Dublin Fusiliers Infantry various	199	267	3	13	10 94	1341 7	15 06	66 33	54 98	90 07	14 96	Karachi and Detl. Hyderabad, 2 months, proceeded to Quetta 10th March.	7
	731	1,192	6	10	66 60	1630 6	8 21	13 06	91 33	33 30	20 42		
	Total	13,551	77	166	710 44	1460 4	8 42	18 16	77 71	23 35	19 42		
Garrison Staff and Departments.	635	561	10	22	36 26	833 5	15 75	34 65	57 10	30 84	20 59	Various station hospitals	1
	Grand Total	13,515	137	298	1018 26	1434 8	10 14	22 05	75 34	27 59	19 17		

## APPENDIX No. I.

REPORT ON THE PROGRESS OF HYGIENE FOR THE  
YEAR 1894.

By Brigade Surgeon Lieut.-Colonel J. LANE NOTTER, M.A., M.D., Professor  
of Military Hygiene in the Army Medical School, Netley.

The chief points of hygiene which have attracted attention during the year under review may be briefly summarised as follows :—

I.—*Legislation.*

The Session of Parliament which was brought to a close in August last gave few legislative enactments of special sanitary importance.

The most important measure passed is the London Building Act, 1894. This Act has consolidated and amended the greater part of the Metropolitan Building Acts, and has considerably extended the powers of the London County Council.

The Merchant Shipping Act, 1894, enables the corporation of municipal boroughs, being ports in the United Kingdom, to appropriate, with the consent of the Local Government Board, land belonging to them as sites for sailors' houses.

The Local Government (Scotland) Act, 1894, has made an important change in the central public health authority in Scotland, which will henceforth be called the Local Government Board for Scotland. The Act establishes parish councils; it also enables a district committee to constitute special districts in landward areas for (1) lighting, (2) scavenging, and the removal of dust, ashes, and other refuse, and (3) the provision of public baths or bathing places, washhouses, and drying grounds.

The cost of these services will fall upon the special district, and is limited to a rate of ninepence in the pound.

II.—*Literature.*

The literature on sanitary science and public health work is increasing, and many new books and papers have been added during the year; the following is a brief summary of the most important that have come under my notice :—

*Outlines of Practical Hygiene.* By C. Gilman Currier, M.D. New York. 1893.

This book has been primarily prepared for busy practitioners and students, in America, to supply the want of a more compendious work upon practical hygiene. The book is practically a mere sketch of the subject, and, if accurately representing American methods and opinions, they evidently in many instances differ radically from our own views. The most glaring departures from British hygienic standards are the advocacy of allowing sewage to flow more or less untreated into large rivers, and the permitting of waste pipes from water-closets, sinks, and refuse tubs to open directly into soil pipes.

*Methods of Practical Hygiene.* By K. B. Lehmann. Translated by W. Crookes, F.R.S. London: Kegan, Paul & Co. 1893. This is a very interesting work, if only regarded as a means of comparing German methods of State

regulation of health with our own. The work being written by a German and from a German point of view it is easy to comprehend that many of the ideas expressed fail in many respects in their application to the requirements of Englishmen. This is particularly apparent in the chapter dealing with food, ventilation, and heating. The work is in two volumes and extremely lucidly translated. The analytical procedures advocated are defective and quite unsuited for the requirements of an English reader. The chief value of the book to us lies in the excellent bibliographical references, which cause it to be well worthy of a place in the libraries of those who take an interest in practical hygiene in any one of its homilies.

*Dwellings of the Poor in and around Towns.* By T. L. Worthington. London. 1893.

This book contains a good summary of the several attempts which have been made by legislation to improve the dwellings of the industrial classes, together with a critical discussion of the methods adopted, both at home and abroad, to place the houses of the working people in a sanitary condition.

It further contains a comprehensive introduction by Dr. G. Vivian Poore.

*Les Maladies du Soldat : étude étiologique, épidémiologique, clinique et prophylactique.* By Marvaut. Médecin-principal de 1<sup>re</sup> classe. Médecin-chef de l'Hôpital Militaire de Villeurbanne à Lyon. 1894. Paris : Germer, Baillière, et Cie., 108, Boulevard Saint-Germain.

This is a very elaborate treatise on the diseases incidental to the soldier and military life generally. All officers of the public medical services will find in it a fund of information, connected not only with the medical history of the French Army itself, but also of other armies and the civil populations. The work is divided into five parts. The first deals with the sickness and mortality of the soldier under the different conditions of military life, in garrisons, camps, and on service. This is followed by a consideration of the infectious group of maladies, those of a general non-infectious constitutional character and diseases of a local nature. The fifth or last chapter is devoted to a consideration of those maladies which may be termed accidental, in that they mainly depend upon the conditions environing the soldier, some of which he shares with the civil population, and some of which are more especially incidental to military life, such as climatic and alimentary disorders.

The opening chapters are very interesting as throwing much light upon the prevalent diseases in the French and other armies. Great stress is laid upon the fact that the chief sickness and mortality of all armies depend greatly upon the two maladies—enteric fever and tuberculosis. The chapter in which the etiology and prophylaxis in the infectious diseases of armies are clearly set forth, is followed by a most exhaustive consideration of enteric fever.

The experience of French military surgeons in regard to this fever has been very large and varied, and this subject is treated in a broad and most instructive manner. Knowing the inefficiency and mortality which this disease causes in our Indian army, every army surgeon should compare the French views with those of their own, and ascertain the hygienic measures that have been or are being carried out in the French army with a large measure of success. In no way could this be better done than by a perusal of this book, in which the information is well put together and clearly expressed. It is a voluminous treatise on the diseases of service life and with which the military and naval surgeons of other countries would do well to make themselves acquainted. There is one point of defect in this book, namely, that the comparative statistics are not up to date; this being particularly noticeable in those referring to the British army.

*The Diseases and Disorders of the Ox, with an Account of the Diseases of the Sheep.* By G. Grasswell, M.A. 2nd Ed. London: Allen & Co. 1894.

For army medical officers and others, whose duties often involve judgment upon meat rations, the perusal of this book should be of value, as although not conforming strictly to the type of meat-judging handbooks, it affords a philosophical and historical account of the diseases of cattle and sheep which the ordinary books fail to give.

*Dwelling Houses: their Sanitary Construction and Arrangements.* By W. H. Corfield, M.A., M.D.

This is the third edition of a well-known book in which all the conditions essential both to the construction and fitting up of a house to place it in a thoroughly sanitary and wholesome state are clearly and concisely stated. It is well illustrated and constitutes a regular *multum in parvo* for both medical and lay readers.

*A Catechism of Hygiene and Sanitary Science*, Part I. By P. Hehir, M.D. Calcutta. 1894.

This is an ambitious attempt, by means of a series of questions and answers, to enable a student to focus his knowledge and act as a sort of examiner to himself. This volume is but the first part of a series of 15; it only discusses the subject of water. The book consists of 600 pages of pica type, and is marred by many misprints and mistakes, evidently the result of careless supervision of the proofs. Many of the questions and answers are redundant, and often have no real reference to each other. The book undoubtedly contains much very useful knowledge, but before it can be recommended requires considerable abridgment and rearrangement.

*The Physiology of the Carbohydrates, their Application as Food and Relation to Diabetes*. By F. W. Pavy, M.D., F.R.S. J. & A. Churchill. 1894.

If subsequent investigation and clinical experience confirm the views put forward by the author in this volume, this book will be a truly epoch-marking work.

The most typical carbohydrate is starch formed by the chlorophyll of plants under the influence of sunlight from the carbon dioxide and water of the air. The exact steps by which this occurs is uncertain, but Dr. Pavy points out two working hypotheses.

In one, the formic aldehyde,  $\text{CH}_2\text{O}$ , may be first produced, and these by polymerisation, or the union of several molecules to form one larger molecule. six such molecules may unite to form a carbohydrate of the composition  $\text{C}_6\text{H}_{12}\text{O}_6$ .

In the other hypothesis, "instead of the carbohydrates being directly or by intermediate steps synthesised from its elements, it may happen that these become appropriated by the living protoplasm and worked up into the proteid matter of which protoplasm is constituted, and from which, by a further action, the carbohydrate is afterwards split off."

It is largely in support of this latter hypothesis that Dr. Pavy devotes this book.

If these views as to the glucoside constitution of proteid matter are correct, it involves a serious modification of our accepted ideas as to the potential values of foods, and their proper adjustment in various diseased conditions, notably diabetes. This book is one which should be seriously studied by every medical man, as it is full of suggestive information upon many points of physiological and pathological chemistry, but ill understood by the majority of physicians.

*Paludism*. By Dr. A. Laveran, Professor of Medicine in the School of Val de Grâce. Translated by J. W. Martin, M.D. Sydenham Society. 1893.

This is a work which should be studied by army medical officers, especially when serving in malarious districts. In it full details are given concerning the plasmodium malarie, the now generally accepted parasite of the intermittent fevers, combined with excellent illustrations of the various forms under which it is met with in the blood.

*The Sanitary Arrangements of Dwelling Houses*. By C. J. Wallis-Taylor, C.E. London: Crosby, Lockwood & Co. 1894.

This is a small book primarily intended for non-professional readers, but it contains so much information upon and excellent illustrations of sanitary appliances that even to professional men it is likely to be of some practical value.

*Hygiene*. By J. Lane Notter, M.A., M.D., and R. H. Firth, F.R.C.S. Longman & Co. 1894.

This is a small book intended as an introductory manual for students and others preparatory to a more extended and practical study of public health work.

*A Healthy Home*. By Francis Vacher. London: Sanitary Record Office. 1894.

The author of this book is a very practical man, and in this reprint from his contributions to the "Sanitary Record" offers very thorough and comprehensive information upon all matters embraced in the subject of hygiene. Its chief value lies in the simplicity of language employed, and the practical details offered, which are so often wanting in the regular text book.

*Micro-organisms in Water: their Significance, Identification, and Removal, together with an Account of the Bacteriological Methods employed in their Investigation.* By Percy and Grace Frankland. London: Longmans & Co. 1894.

In this really remarkable book the authors have embodied the results of much of their own work as well as that of others. It has long been the despair of medical men engaged in the sanitary examination of water supplies that no accurate information concerning micro-organisms in water could be obtained except by a careful search through a wilderness of literature, often in foreign languages. In this volume this information has been focussed so as to be readily appreciated by English readers. The work is no mere compilation, but includes important observations made by one or other of the authors.

After dealing with the methods adopted for use in the examination of water for bacteria, the authors describe the bacterial contents of various waters. Perhaps one of the most important chapters in the book is that devoted to the methods of purification of water for drinking purposes, in which the influence of sedimentation during storage in reservoirs, the purification by sand filtration, and the influence of the thickness of the sand used in the filter beds, the rate of filtration, and the renewal of the filter beds are all described. The filters used for domestic purposes and the other means adopted for the purification of water are discussed and fairly treated. A noteworthy feature in this book is the appendix, in which are given a list and short description of the various micro-organisms that have been met with in water. For those engaged in the examination of water for micro-organisms this volume is of the greatest interest; while those who wish to gain a practical knowledge of the subject and to study its literature it should prove of inestimable value.

### III.—*The Work of Societies.*

The Eighth International Congress of Hygiene and Demography held its meeting this year at Buda Pesth. I have elsewhere mentioned some of the principal points which were discussed at this meeting, and need not refer to it further here. The annual meeting of the British Medical Association was held at Bristol. The Public Health Section was presided over by Professor W. H. Corfield, M.D.

One of the most interesting papers given at the meeting was one by Dr. Hermann Biggs, Chief Inspector of Pathology to the Board of Health of the City of New York. Recent bacterial investigations, he stated, have shown that a considerable proportion of the cases of exudative inflammation of the throat and upper air passages, commonly considered as diphtheria, and having the anatomical appearances found in that disease, are not true diphtheria; on the other hand a considerable number of cases by no means characteristic of true diphtheria are found on bacteriological examination to be examples of that disease, and that while in true diphtheria the mortality is very high and the danger of transmission to others is great, in false diphtheria the mortality is low and the danger of infection slight.

Diphtheria is, like cholera and enteric fever, communicable solely by the discharges from the passages in which the bacilli grow, and if all people who harbour the bacilli can be isolated the spread of the disease should stop. Everything, however, depends on the early diagnosis of the cases and their continued isolation and disinfection until they are free from bacilli. For this purpose bacteriological examination is essential; with its aid a diagnosis can be arrived at in 12 hours, while without it the differentiation between the infectious and the harmless cases is difficult, if not impossible.

Sir Charles Cameron gave the address in public medicine before the general meeting of the Association. A large portion of the address was devoted to a consideration of the etiology of enteric fever, which has been so prevalent of late years in Dublin; he also mentioned the measures which recent experience has shown to be effectual for its prevention. He stated that although enteric

fever is undoubtedly conveyed from the sick to the healthy by means of contaminated water, milk, etc., nevertheless in his own experience, and in that of other reliable authorities quoted by him, the spread of the disease is more frequently due to a polluted condition of the subsoil; he further states that it is probable that dry particles of specifically contaminated soils may readily be blown about as dust, and may thus find their way into milk and drinking water, and be ingested with the food. He believes that enteric fever is a true miasmatic disease, and that it becomes epidemic in certain localities where the soil conditions are favourable to the development of the micro-organisms which cause the disease. That the enteric bacillus can exist apart from the human organism is shown by the facility with which it may be cultivated for long periods on suitable media. As regards the kind of soil which is most conducive to the propagation of the typhoid bacillus, he finds that the sandy or gravelly soils are by far the most favourable in this respect, and he quotes as an example Dublin, where the city is built partly on clay and partly on gravel. Of those who live on the gravelly soil 1 in every 58 of the population have in recent years been infected with enteric fever, whereas in the parts resting on the clayey subsoil the proportion did not exceed 1 in 78.

It has been suggested that the water-logged condition of Dublin is the cause of the prevalence of enteric fever there, the remedy for which condition would be drainage of the subsoil. Sir Charles Cameron, however, finds as a fact that the low lying portion of Dublin, where there is most enteric fever, is not damp, that the ground water there lies low, and that, contrary to ordinary experience, in those parts where the ground water comes much nearer the surface there is least enteric fever.

Referring to the relation of impure water to the prevalence of enteric fever, Sir Charles Cameron drew a comparison between London and Dublin, which he said seems to indicate that the disease is not always due to impure water. In Dublin the Vartry water, which is a constant supply, is not stored in cisterns, is very pure, and is collected in a mountainous region 23 miles from the city.

London, on the contrary, derives its water from rivers into which the sewage of a vast population is discharged, and the water is generally stored in exposed cisterns. Yet the enteric fever rate in Dublin is more than three times that of London.

At the Congress of the British Institute of Public Health, held in London, several papers were read. One by Dr. Priestley, of Leicester, was of special interest. He took for his subject the aerial diffusion of small-pox. Everything he said seemed to favour the theory that the small-pox hospital at Leicester had, during part at least of the epidemic, been a centre of infection, and personally he was satisfied that in this the air played an important part.

The Fourteenth Congress of the Sanitary Institute was held in Liverpool from the 24th to the 29th September. Sir Francis Powell presided, and in his inaugural address reviewed the work of sanitary progress in relation to public health as affected by administration and by law in England; he stated that the improvement in public health had fully justified both the cost and labour which it had involved. The Sanitary Science and Preventive Medicine Section was presided over by Dr. Klein, F.R.S., who delivered an address on the etiology of typhoid fever. He said that, as far as bacteriological evidence went, there was no reason why he should not continue to regard enteric fever as a specific disease derived from antecedent case or cases of the same disease. On bacteriological grounds there was no evidence to show this disease was capable of originating *de novo*, that was to say, through the bacillus coli communis. While holding this view, the duty of preventing pollution with sewage of drinking water, milk, &c. was not the less incumbent, for, although without the typhoid form, the bacillus coli communis might not be capable of causing typhoid fever, the presence of bacillus coli communis in water nevertheless indicated a probable pollution with excremental matters, and amongst them possibly with specific excremental matter.

The question of sewage disposal was discussed in a paper read by Dr. Littlejohn, of Sheffield. He advocated the water carriage system as being the only one complying with the requirements of modern sanitary science; the difficulty arose in the treatment of the sewage at the outfalls. He advocated the



system of precipitation by alum and lime, the effluent being treated by irrigation.

Dr. Bostock Hill, referring to the various methods proposed to deal with sewage, said that nearly all these methods gave bad results at times. He further stated that too much was expected from these systems, and that too good results were far too often anticipated in the way of river purification in his immediate neighbourhood of large towns.

Dr. Alfred Hill read a paper on diseased meat. With regard to tuberculosis he thought that in slight cases of the disease partial instead of total condemnation was sufficient. There was a good deal of discussion on this point; it appeared to me that the discussion was rather based on the commercial than on the scientific aspects of the case, and the results which would follow on such a rule. Ultimately the Congress adopted the following resolution, which was passed by the Society of Medical Officers of Health: "That while awaiting the report of the Royal Commission on Tuberculosis, the presence of tubercle at any stage in more than one part or organ of a carcase, or the presence of tubercle in any other than the primary stage (crude tubercle) in any single part or organ of a carcase, is sufficient and proper ground for the condemnation of the carcase as unfit for food, and that all butcher's meat, &c. of this kind should be condemned accordingly."

An excellent paper on the Sanitation of the Passenger and Mercantile Marine Services was read by Sir William Forwood. He contrasted the lot of those in modern ships with those who were compelled to live in the fore-castle of many merchant ships, which were a disgrace to modern civilisation; this is rapidly passing away, and to-day the emigrant in one of the great Atlantic steamers makes the voyage under sanitary conditions greatly superior to those he enjoys at his own home. Sir William Forwood is opposed to State legislation and regulation laying down arbitrary lines, as this has a paralysing influence and destroys personal responsibility. Beyond laying down regulations necessary for the safety of life and promotion of health, all else seemed to be left to the shipowner, who is keen enough in his own interest to see that life on board his ship is not only healthy, but so comfortable as to secure for his ship a good name and reputation.

An excellent exhibition was held in connexion with this Congress, in which a large display of sanitary appliances were shown. The newest forms of drain-pipes and waterclosets were exhibited, and Messrs. Defries & Co. had one of Geneste and Herscher's steam disinfectors on view. This I saw tested, and the results were excellent. It appears less complicated than other methods.

#### IV.—*Special Points of Hygiene.*

*Filtration of Potable Waters.*—An interesting and instructive report has been made this year on this subject to the British Medical Association by Drs. Woodhead and Wood. Their observations do not present any very new facts, but practically confirm the results of the later examinations upon the relative efficiency of water filters made from time to time in the hygiene laboratory of the Army Medical School, Netley.

The question of the efficient filtration of water is a practical one, which closely concerns the daily duties of every army medical officer. In this connexion it is of the great importance that officers in sanitary charge of troops should thoroughly realise that the conversion of a foul and dangerous into a wholesome water depends not upon the mere diminution of organic matter, chemically demonstrable as being present, but upon the removal of the actual sources of danger present in it, that is, micro-organisms.

Now the evidence is overwhelming that practically few filters in common use are long capable of efficiently removing bacteria and other micro-organisms from water. Their defects in this respect may be, and are, commonly due to the following causes:—(1) Imperfect fittings, particularly of taps and plugs; (2) the employment of filtering media whose pores are initially too large to exert any specific influence in arresting micro-organisms; (3) structural imperfections in the filtering medium which have incurred during its use or purification by heat, such as cracks or faults in its substance; (4) the gradual

growth of bacteria, originally present in the water, through the substance of the filter, till they actually appear in the filtrate.

It behoves, therefore, the attention of every inspecting medical officer to critically examine every filter coming under his notice in respect of these possible sources of inefficiency. Our experience at Netley indicates, so far as service filters are concerned, the greatest and most frequent source of inefficiency in barrack filters lies in cause No. 4. As the rapidity with which any particular filtering medium allows the growth of microbes through it, depends upon (a) temperature, (b) original foulness of the water, (c) its quantity, depth, or thickness, (d) fineness of its pores, (e) pressure or head of water under which filtration proceeds; special attention needs to be directed to seeing that the filters in use do not present any of these conditions:

This is a matter which demands prompt action in India, as it is extremely doubtful whether the ordinary McNamara filters, generally used in barracks in that country, are not rather sources of disease than of prevention. It would be very advisable to replace these filters at once by Pasteur-Chamberland filters, as now used in the French Army. Moreover, the weekly inspection of filters in barracks by medical officers should be a real and scientific inspection, and not the perfunctory procedure which at present it so often is. Every medical officer should be in a position to test the efficiency of barrack filters by seeing whether they yield a filtrate which is free from micro-organisms. The application of this bacteriological test is the only adequate safeguard against the continued use of foul and dangerous filters.

*Enteric Fever.*—A remarkable outbreak of enteric fever recently (April 1894) took place through the use of refuse or "separated" milk from a creamery which had been infected from a single farm near Bandon, in Ireland. It was traced to one of the milkers nursing a typhoid patient. Dr. Welply points out that a streak of filth on the hands a quarter of an inch long may contain 2,500 germs, and as they double their number in 30 minutes, they would number about 40,000 in two hours' time, if they were washed off into the milk. He adds that no less than six epidemics have occurred in 12 months, caused by the infection of co-operative butter factories, and he considers that we have a serious danger to meet with in this new system.

With regard to the survival of enteric bacilli in river water, Edson, of New York, brings forward facts to show that many survive longer during the cold half of the year than the warm. Ordinary bacteria in water were found to decrease from 10,500 in December to 300 per cubic centimetre in July. Hence water purifies itself most rapidly in warm weather.

Some important investigations have been carried out on the bacteriology of enteric fever. Uffelman shows that it remains alive in garden earth for three weeks, in sand nearly three months, on linen two and a half months, and on wood for one month.

Grimbert states that the bacillus of Eberth disappears rapidly from water if the bacilli coli communis is present. It is carried also in the air with dust, and is thus enabled to infect food and milk.

Much interest has recently been taken in some experiments showing the influence of light in destroying microbic life. Marshall Ward shows that the blue rays of the spectrum are those which possess this bactericidal power. It has also been shown that retardation was produced by electric light, and that the effect of the solar rays varies with the species of microbes exposed to them. It is found that the action of sunlight alone is quite insufficient to disinfect articles like leather, which would be damaged by moist heat in an ordinary disinfecter.

*Cholera.*—The resistance of the bacilli to cold was tested by Uffelman. They only succumb after several days' freezing, and perish more rapidly if any low temperatures are employed. With regard to their dissemination in air currents it is found that when adherent to particles of dust they neither survive if floating about for any length of time nor over any considerable distance.

With reference to the bacteriological examination, as used as a method of diagnosis by Koch and others, Sheridan Delépine shows that Koch's tests have been answered by other organisms, and believes that the bacteriological evidence is not infallible. He further states that the localistic views of Cunningham and Pettenkofer have much to be said for them.

As regards the uncertainty of the bacterial evidence of cholera, it is worthy of note that during the prevalence of this disease in England last summer (1893) the official reports were worded as being "undistinguishable from true cholera." This is declared to mean that the clinical evidence or the history of the patient pointed to another conclusion. It was also pointed out that the bacillus is occasionally absent in undoubted cholera.

Dempster has recorded a number of experiments showing that cholera vibrios only survive in moist soil and not in dry soil. In peaty soils, too, they are quickly killed; it would seem that a definite range of moisture, temperature, and other factors are of influence in epidemics.

The question of the conveyance of cholera by compressed rags in bales was considered at the international meeting of the delegates of the various European Governments which met at Dresden; no evidence could be found that any case had ever occurred, though the loose soiled linen of travellers may undoubtedly carry it.

*Malaria.*—The presence of hæmatozoa in the malarial fevers has now become a matter of practical value; they have not been found in the blood apart from malaria, while the injection of blood containing them has produced malaria in healthy persons. The ready demonstration of these bodies is, therefore, of importance, and in the case of acute fevers it will materially assist in diagnosis. Manson directs that a very small drop of blood should be obtained by pricking the finger. Wipe off the first that comes and touch the second with the centre of a thin cover glass. This should be dropped on a slip, so that as thin a layer of blood as possible, with the corpuscles lying separate and flat, be obtained. Examine at once or seal with vaseline, and use two powers of 300 and 600 diameters. Minute specks of dark pigment in a transparent mass, circular, crescent, sausage-shaped, or like rosettes, and occasionally with flagellæ, may be found, one or two in a field. They may be within or outside the corpuscles. If desired they can be stained with methylene blue. Osler only missed them in eight out of 20 cases, and five of these had been under quinine.

*Plague.*—The outbreak of the bubonic plague at Hong Kong was remarkable in many ways. It has existed for some years in districts on the Chinese mainland and spread to Hong Kong in April 1894. The usual symptoms were noted, and the bacilli were found in the buboes by Yersin and Kitasato. These have been examined also by Sims Woodhead, who has described them in detail. The epidemic differed little from previous epidemics of the disease. It died out after six weeks' duration causing some 7,000 deaths. A somewhat similar outbreak occurred in British Ghurwal in 1861, which appeared to be eradicated by sanitary measures; it was prevalent there again in 1886 and 1888 under the name of Maha Mari.

*Disinfection.*—A very important paper "On the Disinfection of Rooms" has recently been published by Dr. Sheridan Delépine, Professor of Pathology at Owen's College. He strongly advocates the use of chlorine, and has thrown considerable light on the way that this disinfecting agent may be best applied. The value of chlorine was comparatively recently pointed out by Koch, based upon a series of laboratory experiments; he showed that sulphurous acid was unreliable, that chlorine was preferable to it, and that bromine water was preferable to chlorine water. As Dr. Delépine points out, these experiments, although giving valuable indications, do not solve the practical difficulty, for the use of chlorine, and still more of bromine water is unsuitable, on account of the irritating properties of the gases evolved and of the destructive action of these fluids.

Schill and Fischer found that tuberculous sputum was not so easily disinfected as might have been expected, and came to the conclusion that a large quantity of solution of various disinfectants, including a 1 in 500 solution of perchloride of mercury mixed with fresh sputum, failed to kill all the bacilli even after an exposure of 24 hours, the most reliable agent being, according to the authors, a 5 per cent. watery solution of carbolic acid, and it is necessary to use a quantity of this solution equal to that of the fresh sputum to be disinfected and to allow the action to continue for many hours.

Dr. Delépine recommends disinfecting rooms in which tuberculous patients have died by strongly damp chlorine, and suggests that the best way to use it would be to wash the walls of the rooms with solution of chlorinated lime.

In using a solution of bleaching powder and applying it as a kind of wash to the walls, floors, and ceilings of rooms to be disinfected, Dr. Delépine states that it occurred to him that (1) the parts to be disinfected would necessarily be saturated with moisture; (2) chlorine in the nascent state would be generated when it was wanted, and much smaller quantities of disinfectant would be therefore sufficient; (3) there would be no necessity to use any complicated contrivance to secure the diffusion of chlorine, or to prevent its escape, though it might be well to keep the air saturated with moisture to prevent the too rapid drying of the walls; (4) the assistants could apply the material without discomfort, and much less intelligence would be required on their part in the carrying out of their duties; (5) after the application of the solution, chlorine would continue to be evolved as long as all the chlorinated lime had not been decomposed, and that, without anything further being required to be done, after the first two or three hours; (6) the rooms would be fit for use as soon as dry again, and no poisonous substance would remain attached to their walls, as when perchloride of mercury is used; (7) if necessary, it is easy to increase its activity by adding acids to the solution or by saturating the air of the rooms with acid fumes and raising the temperature for a few hours.

Dr. Delépine then gives a number of experiments to test and prove his statements. He concludes a most interesting paper by stating that the best method for disinfecting rooms is by chlorinated lime, which should be carried out in the following way:—(1.) A solution of chlorinated lime (1 in 100) should be prepared. (2.) The walls, ceiling, and floor should be washed with this solution applied in the same way as lime or whitewash is usually applied. (3.) This process should for safety be repeated three or four times in succession. By starting each time at the same corner of the room each layer would have time to penetrate into the paper and partly dry before the next is applied. (4.) The room should then be closed as well as possible, a small safe petroleum stove being first placed in the middle of the room, precautions being taken to prevent any chance of fire. Over this stove a large tin basin full of water or chlorinated lime solution should be placed.

Disinfection carried out in this way should be complete in less than three hours. Chlorinated lime itself does not spoil things as much as one would expect, and can be used as indicated in rooms from which all hangings and carpets have been removed without any fear of damage, provided the walls and ceilings are not decorated with valuable paintings or papers. The quantity of bleaching powder required for a room measuring 10 feet in all dimensions would not be more than six ounces, and the quantity of water three pints for one washing.

The following is a list of the samples of the waters, foods, &c., sent to the Hygiene Laboratory at Netley for special analyses, and were reported on to the War Office during the year:—

	No. of Samples.
Water - - - - -	62
Brandies - - - - -	5
Butter - - - - -	3
Bread - - - - -	2
Cheese biscuits - - - - -	1
Meat biscuits - - - - -	1
Coffee - - - - -	1
Meat extracts - - - - -	2
Flour - - - - -	3
Condensed milk - - - - -	1
Milk - - - - -	2
Malt liquors - - - - -	16
Rosbonite - - - - -	1
Field service rations - - - - -	2
Tea - - - - -	2
Total - - - - -	104

The following table gives the means of the analyses of the waters in parts per 100,000 :—

*Table of Drinking Waters according to Purity.*

No.	Class of Waters.	Chlorine.	Oxygen required for Organic Matter.	Ammonia.		Nitric Acid.	Hardness.	
				Free.	Albumenoid.		Total.	Fixed.
34	"Fit for use" - - -	3.5471	0.0343	0.0020	0.0070	0.7844	14.5	6.8
11	"Usable, but requires filtration."	9.4455	0.0460	0.0095	0.0107	0.9648	16.8	8.3
17	"Unfit on account of organic impurity and of excessive hardness and chlorides."	9.0253	0.0814	0.0276	0.0114	1.9589	24.2	11.5

In the above table those marked "Fit for use," this chlorine is somewhat above the average for this class of waters ; it is due to many samples having been received from sea-side stations which were affected by sea-spray, &c.

A large number of these samples were also examined bacteriologically ; and in every case of a suspicious water the number of micro-organisms present were noted. In no case was any specific pathogenic organism found.

## APPENDIX No. II.

## LIST OF OPERATIONS PERFORMED AT THE ROYAL VICTORIA HOSPITAL, NETLEY, DURING THE YEAR 1894.

By BRIGADE SURGEON-LIEUT.-COLONEL W. F. STEVENSON, Army Medical Staff, Professor of Military Surgery, and Surgeon-Major H. R. Whitehead, Assistant Professor.

Operations.	Number of Cases.	Diseases.	Results.				Remarks.
			Completely successful.	Partially successful.	Failed.	Died.	
Amputation, thigh -	1	Chronic synovitis, knee.	1	—	—	—	Lower third.
Do. leg -	1	Scrofula, ankle -	1	—	—	—	Do.
Do. toe, 2nd -	1	Necrosis -	1	—	—	—	Syphilitic.
Dilatation of sphincter and incision of sinuses.	9	Fistula in ano -	8	1	—	—	
External urethotomy -	2	Stricture of urethra.	1	—	—	1	
Excision of veins -	7	Varix of leg -	7	—	—	—	
Exploration of nerve -	1	Contusion of nerve	1	—	—	—	Musculo spiral.
Chronic abscess -	12	Scrofula of joints	5	3	4	—	
Operation for radical cure.	3	Hernia, inguinal -	3	—	—	—	
Removal of glands, neck.	6	Scrofula -	6	—	—	—	
Removal of glands, groin.	3	Suppuration of glands.	3	—	—	—	
Removal of glands, axilla.	1	Do. -	1	—	—	—	
Ligature and excision of veins.	1	Varicocoele -	1	—	—	—	
Ligature, subcutaneous	1	Do. -	1	—	—	—	
Removal of sequestra -	9	Necrosis -	8	1	—	—	
Incision and drainage -	2	Abscess of liver -	1	—	—	1	
Iridectomy -	3	Recurrent iritis -	3	—	—	—	
Excision of portions of ribs.	2	Empyema -	2	—	—	—	
Enucleation of eye-ball	2	Staphyloma -	2	—	—	—	
Excision of wrist -	1	Scrofula -	1	—	—	—	
Excision of lupoid growth.	1	Lupoid growth on foot.	1	—	—	—	
Dilatation of sphincter	1	Fissure in ano -	1	—	—	—	
Sac laid open and clots removed.	1	Aneurism of common femoral.	1	—	—	—	Suppurating sac.

Operations.	Number of Cases.	Diseases.	Results.				Remarks.
			Completely successful.	Partially successful.	Failed.	Died.	
Laparotomy and the introduction of wire into sac.	1	Abdominal aneurism.	—	—	—	1	
Opened and drained	1	Abscess of bone	1	—	—	—	Head of tibia.
Osteotomy, femur	1	Ankylosis in bad position.	1	—	—	—	Following hip disease.
Circumcision	4	Phimosis	4	—	—	—	
Castration	4	Fungus testis	4	—	—	—	
Laparotomy	1	Perforation of vermiform appendix.	1	—	—	—	
Division of tendons	1	Contraction of tendons.	1	—	—	—	
Forcible flexion and extension of joints.	2	Ankylosis	2	—	—	—	1 ankle and 1 knee.
Ligature and excision	1	Piles, internal	1	—	—	—	
Opening mastoid cells	2	Middle ear disease	2	—	—	—	
Removal of tumour	1	Papilloma, penis	1	—	—	—	
Total	90	Total	78	5	4	3	

## REMARKS ON SOME OF THE OPERATION CASES.

Perforation of the appendix simulating venereal bubo.

A very interesting case was that of Private G. B., aged 21 years. He had been invalided from India in consequence of a sinus in the groin, the result of what had appeared to be a venereal bubo which would not heal. Two months previous to his arrival here he had had a primary venereal sore, which was followed, in the usual course of events, by a bubo. This suppurated and was opened, and healed in the greater part, but a sinus remained which showed no tendency to close. The sinus was operated on before the man left India, but still it did not heal, and he was invalided to England. This is the previous history of the case from the man's documents. On arrival at Netley he appeared in good health; his bowels acted regularly, his appetite was good, but a sinus remained in the right groin. The opening in the skin was over the centre of Poupart's ligament, and the sinus passed for two inches towards the brim of the pelvis. Soon after admission the sinus was laid freely open and scraped, but the wound again healed, having a sinus in the original situation.

Another attempt was made on 21st May to get the sinus to close; an incision about 3 inches long was made over Poupart's ligament, having the sinus opening at its centre. The sinus was dilated by means of the finger, which passed almost directly downwards for about 2 inches and then slightly forwards again towards the umbilicus; here a small, hard, loose body was felt by the point of the finger, which was supposed to be an indurated gland, and pressing against it caused it to present under the skin about an inch above the middle of Poupart's ligament. A new incision about 1½ inches long was made over it, as this appeared to be the easiest method for its removal, and the hard body slipped out. It was about the size and shape of a half filbert nut, and was composed of dried fecal matter. No more similar substance could be found. On examining the second incision omentum was seen. The second incision was closed with chromic gut sutures, and a drainage tube placed in the first. Both wounds were dressed with iodoform gauze and alembroth wool. The man was comfortable in the evening; T. = 100·8° F.;

no chloroform vomiting. On the next morning there were distinct signs of a general peritonitis; the tongue was dry and brown; there was general tenderness all over the abdomen; pulse 96; T. = 100.4° F.; he had vomited once or twice; there was a free discharge from the upper wound, which had a marked faecal odour. Reading the case by these symptoms and by its after progress, it is evident that the second incision had made a communication between an appendix abscess of old standing and the general cavity of the peritoneum, and that faecal extravasation had taken place. Laparotomy was performed at 3 p.m. The incision above Poupart's ligament, through which the faecal matter had been removed, was prolonged upwards, parallel to the ligament, making its length about five inches. Several ounces of blood-stained pus, with a strong faecal smell, immediately flowed up from the pelvic cavity, and a thickened mass of omentum came into view, having at its centre a ragged hole with dark coloured edges. This piece of omentum was firmly attached to the iliacus muscle and to intestine. On breaking down the attachments it was seen that the portion of intestine to which it had been adherent was the caecum, and that the vermiform appendix was matted to its centre at the situation of the perforation above referred to, and that the perforation communicated with the caecum through the appendix. The thickened piece of omentum was ligatured off with silk ligatures at four points and cut away from the healthy membrane, leaving it attached to the caecum by the appendix. The appendix was then ligatured close to the caecum and cut away, freeing its remains together with the mass of thickened omentum. The abdominal cavity was thoroughly flushed out with boracic lotion at the temperature of about 100.0° F. until it returned quite clear. The incision was closed by two sets of sutures, one of chromic gut for the peritoneum and muscles, and one of silver wire, including the skin and superficial muscles. A glass drainage tube was put in at the lower end of the wound, reaching to the deepest portion of the pelvis, and iodoform gauze and sublimate wool dressings applied. On the next day the man was quite comfortable; there was no abdominal tenderness or vomiting. The temperature was normal, but had reached 100.0° F. during the night; pulse 96; tongue moist. A little blood-stained fluid was removed from the pelvis through the glass drain by means of a syringe; the discharge was sweet and odourless. No food or drink was given during the first 15 hours. The progress towards recovery was almost uninterrupted; on one or two occasions abdominal distension and pain occurred, but were immediately relieved, and comfort and ease secured, by the use of turpentine enemata and saline laxatives, as recommended by Mr. Lawson Tait for cases of threatened traumatic peritonitis. The wound healed soundly, and the man went on furlough, on return from which he was supplied with a belt having a firm flat pad over the cicatrix, which was evidently weak, and he was discharged from the service.

It is evident from the history of this case that the original abscess was the result of appendicitis and not of a venereal bubo, although the symptoms did not at any time point to this condition; the appendix abscess was cut off from the cavity of the peritoneum by adhesions, but the two were made to communicate at the operation by the second incision through which the hard faecal matter was removed, commencing general peritonitis being the result. Attention may be drawn to the treatment of the appendix; it was simply ligatured and removed; its cut edges were not turned in and sutured, as is usually done, because there was not room for this procedure. The good effect of Mr. Lawson Tait's method of treatment of threatened traumatic peritonitis by turpentine enemata and saline was very marked. When the bowels did not act for a day or two and no flatus passed, abdominal distension and pain, accompanied by discomfort and high temperature, immediately occurred, and were as quickly relieved by the means referred to.

A case of abdominal aneurism was treated by laparotomy, and the introduction of steel wire into the sac, with, unfortunately, a fatal result. Short notes of the case are as follows: Gunner P. B., aged 25 years, was invalided from India for an abdominal aneurism, and arrived at Netley in April 1894. Before enlistment he had been a hard drinker, but not so latterly; he had never had syphilis. In June 1893 an aneurism had been detected a little to the left and close above the umbilicus; it gradually increased in size, and in September

Case of abdominal aneurism treated by the introduction of wire into the sac.



1893 was said to be as large as a cricket ball, and accompanied by severe pain. The man attributed his complaint to strains received while working heavy guns. At the time of his arrival at Netley the patient was a healthy-looking, well-nourished man. A tumour, having all the characteristics of an aneurism, was situated at about 2 inches below the left costal margin, and about 3 inches to the left of the median line as the man lay on his back in bed. Through the abdominal walls it felt, to the hands placed on either side of it, to be about the size of a large orange, and quite globular in shape. When the patient turned well over to the left side the tumour passed a little further into the left hypochondrium, and when lying on the right side it passed over to about 3 inches to the right of the median line; it was therefore quite movable from side to side. On account of this mobility it was thought probable that the aneurism was not on the aorta itself, but rather on either a branch of the coeliac axis or on the superior mesenteric artery. There was a soft systolic bruit in the tumour, but no pressure symptoms in connexion with it. The pulsations of the femorals below were apparently normal. On 22nd June the abdominal pain became severe, and the tumour was steadily increasing in size. He was at first in the Medical Division, and Tufnell's treatment was tried for a considerable time, but with no good result. He was also treated with calcium chloride and the inhalation of carbonic acid, at the suggestion of Professor Wright, with the effect of greatly increasing the coagulability of his blood, but with none on the dimensions, pulsation, or solidity of the tumour. The aneurism still continuing to increase in size, and medical treatment having failed, consultations were held on many occasions between the officers of both divisions to consider the question of the feasibility of surgical interference. Proximal pressure was impossible on account of the proximity of the tumour to the costal margin; it was decided that distal pressure should not be attempted, for the reasons that it had never succeeded in similar cases, and on account of the probability of fatally injuring some of the abdominal contents. There therefore remained only the immediate treatment of the tumour itself by laparotomy; and the means available by this method were (1) the ligation of the vessel leading to the aneurism, and (2) the introduction of wire or some similar foreign body into the sac in order to induce the formation of clot. As regards ligation, the fact that the tumour passed over at least 3 inches to the right or left of the median line as the man lay on the corresponding side, at least warranted a hope that it might be found to be so far forward on one of the branches of the abdominal aorta that sufficient of the healthy vessel might be available on the proximal side of it as to enable a ligature to be applied at that situation; on the other hand if this were found to be impracticable the treatment by wire could be carried out. The patient was an intelligent man, he knew he was suffering from a fatal disease, one which could not be of long duration, and he was most anxious that something should be done for him in the way of operative treatment. He was willing that any procedure which offered even a faint chance of cure should be undertaken; as he put it, he "would prefer to die in hospital rather than go out to live for a short time on his friends." The operation was accordingly performed on July 23rd at 10 a.m. An incision was made in the median line from 2 inches below the ensiform cartilage to near the umbilicus. When all bleeding had been stopped the peritoneum was opened. The omentum was found to be firmly adherent to the abdominal wall over the tumour and to the tumour itself, and firm adhesions between the tumour and all the parts in its vicinity prevented any attempt being made to reach the proximal end of the vessel for the purpose of applying a ligature. The transverse colon and the omentum were pushed upwards off the tumour, many adhesions having to be broken down; a very distended vessel came into view, and two small branches coming off from it were torn across and required ligation. Beyond this there was no serious hæmorrhage at this stage of the operation. When the colon and omentum had been pushed up from the tumour it still appeared to be covered by more than one layer of peritoneum; these were torn through by means of two pairs of dissecting forceps, and the surface of the tumour laid bare over an area about the size of a shilling. At this situation a very fine trocar and canula were passed in for two and half inches, when the point was felt to be free within the sac. Severe hæmorrhage immediately occurred alongside the canula, and continued very freely, while the wire was being

pressed in, about five minutes. The wire used was the finest steel wire, and it had been tightly rolled on a small reel, so as to ensure its coiling up within the sac. It was passed through the canula by means of a small pair of pliers, the wire being gripped by the pliers at about an inch from the end of the canula, and pushed in and then released. In this way, inch by inch, two yards of wire were disposed of. When the outer end of the wire came flush with the end of the canula it was pushed onwards, and free into the sac, by means of a knitting needle which had previously been filed down so as to accurately fit the canula. The latter was then withdrawn, and in about a minute, under pressure on the puncture, the hæmorrhage above referred to ceased. No blood had entered the peritoneal cavity, so the latter was not flushed out. The wound was closed by means of two rows of sutures, one of chromic gut for the peritoneum and deeper parts of the incision, and one of silver wire for the skin. Boracic acid was dusted over the wound, and iodoform gauze and alembroth wool dressings applied. The operation occupied an hour and a half. The patient took the anæsthetic well, and recovered from it rapidly, shock being but slightly marked. No food or drink was given during the day, a few pieces of ice only being allowed. At 6 p.m. the temperature was 98.2° F., and the man seemed to be fairly strong and quite comfortable. At 7 p.m. severe hæmorrhage occurred, the dressings and sheet suddenly becoming saturated. The blood was found to be coming from the lower end of the wound, which corresponded with the site of the trocar puncture. Hæmorrhage again occurred at 9 p.m. and at 2 a.m., but not to so great an extent. An ice-bag was then applied over the wound, a layer of gauze intervening, and no further bleeding took place. At 9 a.m. next day he was in a distinctly low condition, suffering from shock from loss of blood, but not to any very marked degree; the temperature was 99.6° F. He had vomited once or twice during the night; the pulse was weak, 100, but quite perceptible at the wrist; the respirations were 30 per minute, and sometimes of a sighing character; he complained of extreme thirst. As the wound was quite dry the ice-bag was removed and the dressings reapplied. He vomited two or three times during the forenoon, and, as he was suffering great pain in the wound, at 12 noon a hypodermic of morphine was given. At 1 p.m. he was restless, and inclined to vomit; at 1.35 p.m. he tried to sit up in bed to vomit, and fell back in a state of syncope from which he did not rally. He died 27½ hours after the operation. At the post-mortem made next day the aneurism was found to be on the superior mesenteric artery; the sac had diminished very considerably in size after death, in consequence of the cessation of the blood tension within it, and was no longer in contact with the abdominal wall. It was somewhat sausage-shaped, about six inches long, three and half inches in diameter at the base, tapering towards the outer end. The dilatation commenced at the origin of the vessel, and seemed to include the front wall of the aorta at this point. From the distal end of the sac the artery continued its course, slightly dilated for an inch or so, but otherwise apparently healthy. The sac, in its contracted condition, was quite filled with firm clot entangled in the coils of wire which were entangled in each other. There were many and firm adhesions between the small intestines and the sides and base of the tumour. There was no trace of blood in the abdominal cavity, nor any sign of commencing peritonitis. Both ventricles of the heart contained dark-coloured clots: the aorta in its whole length showed numerous patches of thrombosis.

I have found records of 10 cases of thoracic and abdominal aneurism, treated by this or similar methods. Of these two were cured (Loretta's and Mr. Morse's); in two no result either way was produced, and the remainder died. It is a procedure which is only justified by the impending death of the patient, by his clearly understanding the risks he runs and his expressed wish to undertake them, and the failure or impossibility of other means, conditions which were all fulfilled in this case.

Corporal J—G—, aged 25 years, having a history of secondary syphilis, detected a swelling in his left groin in February 1893; it had an expansile pulsation, and was very painful. This was diagnosed as an aneurism of the common femoral, and was treated by digital compression, with the result that the tumour became solid and all pulsation in it ceased. The man was invalided and sent home; but while on the journey down country the contents of the sac softened, but without recurrence of the pulsation; and under

Aneurism of the common femoral artery; suppurative of the sac.

the belief that suppuration had taken place the sac was opened by a small incision, but only dark coloured blood and clots escaped. On arrival at Netley the man was thin and pale. A large tumour, covered with dusky skin, extended from Poupart's ligament to the middle of the left thigh, having two openings about its centre, through which blood, and breaking down blood clots, were escaping. The tumour was soft and boggy, but had no pulsation, and pulsation was absent in the popliteal and tibial vessels. The knee was flexed to almost a right angle. Evidently the contents of the aneurismal sac had broken down and suppuration to a slight extent was taking place. There was a good deal of tension in the walls of the tumour, and as blood had been oozing through the apertures for many weeks it was thought probable that any operation, such as laying open the sac and turning out the clots, might necessitate ligation of the external iliac artery, but this proved not to be the case. Three days after his admission chloroform was administered and the tumour laid open; the contents, broken-down clot, were turned out, leaving an enormous cavity amongst the muscles on the inner side of the thigh, about the size of a large cocoa-nut, the sides of which were hard and smooth. No arterial bleeding took place, but there was a general ooze of dark venous-looking blood. The cavity was irrigated out with hot sublimate lotion (1—4000), packed with iodoform gauze, and the thigh covered with alembroth wool; it slowly but steadily filled up and healed completely. The knee was gradually extended to a considerable extent by weights, and later on, when the wound had nearly healed, it was forcibly extended under an anæsthetic. Eventually the man had a very useful limb.

External  
urethrotomy.

This operation was performed twice; one case made a complete recovery and the other died. The patient who died after the operation, had been invalided from India for secondary syphilis, and was admitted here early in April. He had a history of gonorrhœa, but none of stricture. On April 11th he complained of severe pain in the bladder region, and was unable to pass water. A No. 1 silver catheter was passed with difficulty, and the bladder emptied of a quantity of thick foul-smelling urine. For some days he passed water in a hot bath, and later the No. 1 was passed again and tied in, but it soon became blocked with mucus, and was removed. It could not be again passed, and as the hot bath failed the bladder was aspirated above the pubes. A day or two later external urethrotomy was carried out by cutting down on the point of a catheter in the perineum, and dissecting through a cartilaginous mass in that situation; a female catheter was passed into the bladder from the wound, and tied in. He had had great pain in the bladder and abdomen generally since he first complained of the difficulty of passing water. Now that the bladder was being drained the evidences of severe cystitis were very plain; the urine was thick with mucus and shreds or flakes of harder matter, and it was most foul-smelling. The man would not, after the first day, permit the bladder to be washed out, and though for a few days he expressed himself as being much more comfortable since the operation, he looked extremely ill; T. = 99.0° F. to 101.0° F. On 18th April he had severe cough, rapid breathing, and the physical signs of pneumonia at the right base. This condition continued and increased in severity, accompanied by abdominal pain and distension, and on May 4th he was very feeble—pulse weak and rapid, cough constant, great pain in abdomen, and T. = 99.8° F. On May 5th the pulse was thready and irregular, and the surface cold and covered with perspiration. The wound all through looked fairly healthy. He died on May 6th. At the post-mortem, on opening the abdomen, a considerable quantity of brownish-red putrid fluid escaped. The base of the right lung was solid, and all the bronchi filled with blood-stained mucus. There was an abscess in the right kidney; there were marked signs of peritonitis; the bladder was small, thickened, and soft, containing very foul green pus. The remarkable point about this case was that, with a stricture so tight as only to admit a No. 1 catheter, the man made no complaint regarding the difficulty of passing water until complete retention occurred. When the operation was performed the bladder was in an advanced state of inflammation. The impossibility of irrigating the bladder was one of the worst features of the case. The man was saturated with syphilis and greatly emaciated at the time of his admission; and little or no improvement in his general condition took place after the operation.

Hitherto we have operated for varicocele by the open method, excision of the dilated veins between two ligatures, but this year we did one case by the method of subcutaneous ligature. No suppuration occurred at the punctures, and the man did quite well; but, although one cannot form much of an opinion of the value of the subcutaneous method from one case, I may mention that it appeared to us that the recovery was slower after the latter operation than after the open one, that, in fact, the number of days necessarily spent in bed was greater.

The patient, a trumpeter in the R.H.A., while serving in India, suffered from hip-joint disease on the right side, an abscess formed which discharged for some months. During treatment the thigh became flexed on the abdomen at an angle of about 45°. On his admission to Netley the original disease had become quiescent, the sinuses had stopped discharging, and had healed. As a preliminary measure, the patient was placed under chloroform, with a view of clearing up any doubts as to the character of the ankylosis. This was found to be of a bony nature, and it was therefore decided to divide the femur and straighten the limb. An incision two inches long was made in the line of the shaft of the femur, commencing three inches below the upper edge of the great trochanter, the incision was carried down to the bone, the soft parts were then retracted, and a McEwan's osteotome used to divide the femur. Section was readily effected without any splintering. An endeavour was then made to straighten the limb, this was prevented to a great extent by tight bands of fascia on the anterior aspect of the thigh; after these had been freely divided by a tenotomy knife, subcutaneously, the limb could be brought into a straight position. The operation wound was carefully closed, and no drainage tube employed. The limb was retained in the desired position by a long Liston splint and sandbags. The patient made an uninterrupted recovery. The wound healed by primary union, and complete consolidation of the femur had taken place by the sixth week. The limb was then placed in plaster. He was discharged ten weeks after operation with a perfectly straight and useful limb. The amount of shortening was hardly more than half an inch, and he could walk well. Whilst dividing the femur a large piece of the edge of the chisel became detached in the wound, this could not be found, and was therefore unavoidably left, but no bad effects resulted.

Several operations have been undertaken during the current year for the removal of glands, either by complete excision, or by scraping, or by a combination of both. Some of these operations have been of an extensive character.

In reviewing these cases, it is noticeable that several of the patients had been under treatment either at Netley or elsewhere for considerable periods. This was particularly marked in cases of chronic inflammation and induration of the glands of the groin. In cases where the glandular abscesses had only been opened by small incisions and new foci of inflammation had been treated in the same way, the results, as a rule, were far from satisfactory, a large mass of chronically inflamed and indurated tissue remaining, in which acute inflammation was set up on the slightest provocation.

The case of Corporal F. S., of the Royal Engineers, exemplifies this. The patient was a rough rider in the riding school, and while following his occupation he received a strain of the glands of the right groin; he was admitted to hospital for inflammation of the inguinal glands at the beginning of April 1894. He remained under treatment from that date till September; the glands of the right groin were much enlarged, two sinuses led deeply into a mass of indurated gland tissue. This condition seemed very intractable, and the patient's health began to show signs of deterioration. On September 21st the whole mass of gland tissue of the right groin was removed. On section two small abscesses were found deeply imbedded in the gland tissue. He speedily recovered and returned to his duty with a sound cicatrix early in November. Any treatment short of complete removal of the glands would have delayed his entire recovery for months, and would then probably have left him with a mass of indurated gland tissue liable to become inflamed very readily.

In two or three instances in which the cases seemed peculiarly suitable, an effort was made, after removal not only of the glands but of any doubtful skin, to secure union by first intention. In each case this failed, probably on account of the depth of the wound, and the difficulty of perfect apposition,

and also from the injury the tissues received in tearing away the glands from their bed.

In dealing with enlarged and suppurating glands of the neck much difficulty was often encountered in the thorough removal of all gland tissue; in these instances, by removing some glands, and scraping others, the cases were, as a rule, much benefited.

Removal of  
necrosis.

One case in this series was of especial interest, as it illustrated how useful a limb might result, even after extensive injury of bone, and loss of muscular fibre.

Sergeant-Major J. F., 1st West India Regiment, was wounded at Waima, during an attack which was delivered on our camp in the early morning by the French, who mistook the English troops for disaffected tribesmen. The bullet struck Sergeant-Major J. F.'s right leg on the outer side two and a half inches above the ankle joint, and passed straight through the leg at this spot, causing a resecting fracture of the right fibula. The bullet was supposed to have been fired from a chassepôt rifle. A few days after the infliction of the wound the patient was despatched to the coast. He suffered severely during transit, which occupied some weeks, from fever and inflammation of the leg.

On his admission to Netley he was extremely debilitated. Three sinuses existed on the outer side of the right leg, which communicated, and led down to dead bone. The parts were in a very inflammatory condition, and the discharge thin and unhealthy. As the drainage of the wound was not satisfactory, three weeks after admission the sinuses were laid open, and a sequestrum, which was loose, removed from the upper end of the fibula. It was now found that about an inch of the fibula was deficient, the bone having been completely smashed to this extent by the bullet. After removal of the sequestrum and scraping the parts it was noticed that the peronei muscles seemed to have undergone complete degeneration; the muscular fibre was replaced by a very unhealthy oily-looking substance. Much of this unhealthy-looking matter was scraped away. A severe attack of cellulitis occurred after the operation, which, in the unsatisfactory state of the patient's general health, endangered his life. He ultimately, however, recovered completely, and was able to walk very well, a slight limp being alone noticeable. The partial absence of the peronei muscles did not seem to incommode him as much as might have been expected. He was discharged the service, as it was not considered advisable to submit the patient again to the climate of the West Coast of Africa.

Exploration of  
of musculo-  
Spiral nerve.

Private L. W. M., 1st Battalion, Royal Irish Fusiliers, was admitted to Netley November 11th, 1893, suffering from symptoms of loss of function of the musculo-spiral nerve of the right arm. The history of the case was as follows:—On December 27th, 1892, he was about to enter a gharry, the horse bolted, knocked him down, and the wheel of the carriage passed over the right arm just above the elbow joint. He received no other injury. On regaining his feet he noticed that his right forearm and hand were powerless, and the parts below the injury felt numb. The skin was bruised at the seat of injury, but not broken, and no fracture of the bone could be detected. He was admitted to hospital. In March 1893, as no recovery of motion and sensation had taken place, the medical officer in charge of the case cut down and stretched the nerve at the seat of injury. No improvement took place, and on his admission to Netley the right arm was very powerless. A painful spot existed on the outer side of the right arm, in the course of the musculo-spiral nerve, and a distinct fusiform enlargement of the nerve could be felt at this spot. As no improvement had taken place and the arm was useless it was decided to cut down in the course of the nerve and to explore the seat of injury. This was done on the 9th January 1894. The nerve was found deeply bound down by cicatricial tissue at the seat of the original injury, and a distinct fusiform enlargement for about one inch in length was present. The nerve was freed from its surrounding attachments as much as possible. For some weeks after the operation very little improvement was noticed, but gradually, under treatment by the continuous current and massage, the sensation and motion returned perfectly, and the muscles regained their tone. He was discharged fit for duty six months after the operation.

Removal of  
testicle.

This operation was necessary in three cases. One was a case of tubercular testicle, in this case the predisposing cause seems to have been a blow which the man received 12 months before the acute symptoms were noticed. The

second case was one of gumma of the testicle. This had broken down and an abscess in the substance of the testicle was the result. Hernia testis occurred and resisted treatment. In the third case the diagnosis and treatment presented more difficulties. The patient, a corporal in the South Lancashire Regiment, gave the following history. Eleven months before his admission to Netley he was riding, and the horse stumbling he bruised his right testicle against the saddle. The testicle swelled up and he had to go to hospital, but returned to duty in about a fortnight. A few days after this the testicle again became swollen and he had to return to hospital. On several occasions the tunica vaginalis had been tapped and fluid removed, the testicle was found on these occasions to be enlarged and very painful. On his admission to the Royal Victoria Hospital the testicle on the right side was found to be much enlarged and very painful; a hydrocele existed; this was tapped and all the fluid drawn off. The testicle was then found to be enlarged, especially the epididymus, and painful. Both local and constitutional remedies were tried but without success. The patient's health became greatly deteriorated by constant pain and want of rest, and he begged that the organ might be removed. He was most anxious to remain in the service. As he had been in hospital nearly a year, and practically no improvement had taken place, but the contrary, and his general health had shown signs of failing, it was decided that removal of the organ held out the best prospects. On removal the testicle was found densely fibrous, especially the epididymus, and the tunica vaginalis was much thickened. The man speedily became convalescent and returned to duty.

In each case the cord was ligatured "en masse" and the Staffordshire knot was used to tie the stump. In one case recurrent hæmorrhage occurred, not from the cord but from the surrounding parts; one or two bleeding spots were tied and the cavity packed with sponges to keep up even pressure.

This was a rather instructive case. Corporal T. D——, of the Royal Sussex Regiment, was admitted to hospital at Netley on April 4th, 1894. He was invalided home for synovitis. He stated that for some weeks he had suffered acute pain in the right knee, and the joint had been very swollen and hot. On questioning, the man referred the pain to a small area, about the size of a shilling, situated on the inner side of the head of the tibia, three-quarters of an inch below the articular surface. This spot was intensely painful, and the parts over it were slightly cedematous. As the symptoms pointed to an abscess in the head of the bone, an incision was made at this spot. A small abscess in the bone was found, and the contents evacuated. The abscess did not communicate with the knee-joint. The pain and swelling of the joint rapidly subsided, and the man made a rapid recovery.

Abscess of bone opened.

Private W. M ——, Connaught Rangers, was admitted to the Royal Victoria Hospital, Netley, on June 6th, 1894, with inflammation of the right ankle-joint. At this time he had a sinus behind the outer malleolus, which led behind the ankle-joint. He was a good deal emaciated, and seemed broken down in general health. The ankle was stiff, and when moved pain was complained of. The discharge from the sinus was scanty, and the surface temperature over the right ankle-joint was not raised. No dead bone could be detected by the probe. The joint was kept at rest, but he continued to suffer from sleeplessness due to pain in the joint at night. About six weeks after admission the joint suddenly became much swollen, and acutely inflamed, the pain was intense, and suppuration occurred about the joint. On July 25th, free incisions were made on each side of the joint, and a drainage tube passed behind it. After this the swelling subsided, and the temperature fell. No dead bone could be felt, but the symptoms pointed strongly to this condition. Immobility of the joint was aimed at, with the hope that with efficient drainage and perfect rest, the disease might be arrested, and recovery take place at the expense of a stiff joint. Great pain and starting at night still, however, continued to be prominent symptoms, and the temperature also began to assume a slightly hectic character. It became evident that any further attempt to save the limb would imperil the patient's life, and it was therefore decided to explore the joint thoroughly under chloroform, and if the disease turned out to be extensive and of such nature as not likely to be sufficiently dealt with by partial operation, to remove the foot. The sinuses were therefore freely laid open, and the joint examined by the finger; it was found that the disease of the articular surfaces of the ankle-joint was very extensive, and that the internal malleolus was

Amputation of leg.

Radical cure  
of hernia.

also considerably implicated. It seemed very doubtful if a Syme's amputation would completely remove all the diseased bone. Under these circumstances amputation was effected at the junction of the middle and lower two-thirds by Teale's method. The wound pursued an aseptic course, and the patient was allowed up on the 19th day, after three dressings, with the parts healed.

Three operations for the radical cure of hernia were performed during the current year. In each case the hernia was of the inguinal variety and reducible. The period which the hernia had existed varied from two and a half to one year. The method of operating by twisting the sac, and suturing the conjoined tendon to Poupart's ligament was adopted in each instance. A detailed account of the steps of this operation has been given in previous reports, and it is therefore unnecessary to refer to this again. Perhaps the most important feature with regard to this operation is the strict attention which should be given to the cleansing of the skin, and the packing with an antiseptic solution of the field of operation. The ligatures used by us, also, for this operation are most carefully prepared: the silk employed for ligaturing vessels is boiled, and the silkworm gut used for the deep sutures, and the horse hair employed for the superficial sutures, are well soaked in a 1-20 solution of carbolic acid. The danger of using ligatures which have been kept in carbolic oil only has been so often pointed out that it is needless to refer at greater length to this subject.

The results of the operation were most satisfactory; in each case recovery was rapid, two were discharged to duty, and one was invalided. The latter case complained of no pain or weakness till he went on leave, after his return from this, he stated the parts felt weak; in all respects the case seemed one of perfect recovery, and the probability is that during his leave he had found it more profitable to try and leave the service.

In connexion with permanency of the cure in this operation, it is interesting to note that only two cases of those operated on before entering the service have come under observation at Netley with a view to invaliding. One case had to be discharged the service on account of neuralgia at the seat of operation, and in the second case the hernia reappeared after two years, the operation having been performed at a large metropolitan hospital before the enlistment of the man.

## APPENDIX No. III.

REPORT ON THE EIGHTH INTERNATIONAL CONGRESS OF  
HYGIENE AND DEMOGRAPHY HELD AT BUDA PESTH,  
FROM SEPTEMBER 1ST TO SEPTEMBER 9TH, 1894, TO WHICH IS  
ADDED NOTES ON THE SEWAGE AND WATER SUPPLY OF HAMBURG,  
FRANKFORT, HOMBURG, AND PARIS.

By Brigade-Surgeon-Lieut.-Colonel J. LANE NOTTER, M.A., M.D., Army  
Medical Staff, Professor of Military Hygiene in the Army Medical  
School, Netley.

Acting under instructions contained in War Office letter, No. 4,800/6/1,154, and dated August 13th, 1894, I left England on the 15th of August accompanied by Surgeon-General J. S. Billings of the United States Army.

The orders I received were that on my journey to Buda Pesth, as a delegate to represent the British Army, I should take the opportunity to visit the water and sewage works of those towns where large works had recently been erected with the view of reporting on them generally. I was also appointed to act as a member of the Committee on International Medical Statistics as representative of the British Army.

The first place we visited was Hamburg: the epidemic of cholera which occurred in 1892 having been attributed to impure water, the authorities lost no time in endeavouring to secure a purer supply, and in a little over six months the present works were completed. The city obtained its new supply of water in May 1893. Hamburg

The water is taken from the River Elbe, at a point much higher up the river than formerly, and further away from the sewer outfall, so as to avoid, as far as possible, any backwash bringing sewage with it. The distance from the old intake to where the present supply is obtained is one and half miles.

Formerly the water was pumped into tanks on the mainland close to the town, and after it had been allowed to settle for a short time was delivered to the houses in the city without undergoing any filtering process; that such water should have been contaminated by sewage being brought by the rising tide from the sewer outfalls was therefore most probable.

Now, the water of the Elbe taken at a greater distance from the town and its sewer outfalls is pumped on to an island in the river.

I carefully inspected this part of the river. It is extremely doubtful if the present source of supply is a safe one; the water is very dark, contains much sedimentary matter, and, if not contaminated during ordinary tides by sewage from the town outfalls, it is certainly not free from this danger during exceptional states of the river. There is also always the liability to pollution from a river like the Elbe, which carries a large traffic in merchandise and a constant floating population; although a notice board is placed close to the intake directing the attention of barge owners to the regulations which orders no boat to anchor within 160 yards, this distance is not sufficient to afford sufficient protection.

The water taken from the Elbe is stored in newly constructed tanks, where the suspended matters are allowed to subside by mechanical action. The water as received from the river into these tanks is very impure; the time allowed for the suspended matters to settle is from 24 to 36 hours, after which the water is drawn off for the purpose of passing it through the sand filter beds.

Ordinary sand filters are used. The total filtering area measures nearly 34 acres, and filtering at the rate of 2·74 feet per square yard of surface in the 24 hours.



One serious drawback to these filters is their size. In winter, exposed as these filter beds must be to the severe frosts which are frequent and prolonged, the surface of the filter must inevitably be frozen over in part, if not on its entire surface; if in part, then the movement of the water through the unfrozen portion of the surface must take place at a rapidity in inverse proportion to the smallness of the permeable area. Again, if one of these large filter beds requires cleaning the greater the superficial area of a filter the more difficult will it be to prevent the formation of ice upon it, and therefore to clean it. Further, if water ceases to pass through one or more filter beds from this cause, it will naturally throw extra work on any others which remain unaffected. The future must show whether it is possible to keep filters of such dimensions free from ice, and to cleanse them so rapidly that the sand surface does not freeze.

There is no rule as to cleansing and recommencement of filtration, as the process of filtration is regularly tested by bacteriological examination daily—a special laboratory building, with an adequate staff and amply supplied with apparatus being placed in the grounds and close to the filtering areas. The moment a water is found to be insufficiently filtered the filtering material is removed. Each filtrate is examined once daily, and frequently oftener. The sample of water is taken in a specially constructed bottle which has been carefully washed and rendered sterile; it is dropped by a chain to about 3 feet below the surface and withdrawn and immediately sealed by a gas flame. Within a few minutes the water is submitted to bacteriological examination, and from personal observation I can testify to the fact that the water I saw was quite sterile. A chemical examination is also made daily in a separate laboratory in the same building as that in which the bacteriological work is carried on. The water is raised as formerly into a water tower, and thence reaches the houses by force of gravitation.

One cannot help seeing the danger underlying such a source of supply as has been selected for Hamburg. It is not even now certain that the intake is not within the limits which may receive the backwash from the sewer outfalls, and, however carefully watched, open filters in such a climate are liable to a breakdown.

A better source of supply would have obviated the expense which it entailed in endeavouring to obtain a tolerably pure drinking water from a sewage-contaminated river. It is very well to lay down a standard of purity for filtered water; but the difficulty arises when engineers have to construct works which will deliver a constant supply at that standard. A far safer plan would have been to select a source less liable to contamination.

The sewers in Hamburg are very old. They are not impervious, and are intended to drain away some of the sub-soil waters; but they also contaminate those waters by permitting the sewage to escape into the surrounding ground. The sewers are ventilated by the rain-water pipes. This, of course, is most undesirable, especially as the storm-water overflows open directly into a lake, the Aussen Alster, which is in the middle of the city, and contaminate it. The sewer outlets open direct into the river and harbour; in fact, the whole system is bad, and urgently requires reorganisation.

When at Hamburg we visited the Eppendorf Hospital. This hospital was begun in 1885 and completed in 1889. The site covers 45 acres. The buildings are 82 in number, 10 of which were erected to meet the demands on the hospital during the epidemic of cholera in 1892; the remaining 72 are built of brick and are substantial buildings.

In the centre in front and opening on the Martin Strasse is the main administrative building, having behind it, and at a short distance from it, the Governor's house. The wards, which are all of single storey, and built on the pavilion plan, are arranged behind the administrative block in parallel rows, the men's side being to the east, and the women's to the west of the road which leads in a straight line from the centre of the front block. There are also two small isolation pavilions, male and female; on the west side is a building for lunatics, and to the north of this the mortuary. Other buildings, such as kitchen, stores, laundry, boiler-house, ice-house, officers' quarters, &c., are conveniently situated.

The whole of the buildings are entirely detached, there being no covered communication of any kind. This hospital is capable of accommodating

Eppendorf  
Hospital.

1,500 patients. The large ward pavilions are one storey high. They are raised about 18 inches above the ground, and, except at the end, have no basements. In the large wards are 30 beds placed very close together; the floor space is only 78 feet. The cubic space per bed is 1,280 feet, but this is obtained by raising the roof to the height of 16 feet 3 inches. The proportions of these wards certainly do not comply with the usually accepted conditions of area and cubic space in due relation to each other. At the further end of the ward is a day room with doors opening out into the garden.

The partitions enclosing the waterclosets, three in number, which open off the day room, do not reach to the ceiling or down to the floor, and are not separated by a ventilated lobby, in fact these waterclosets are directly ventilated into the day room. On the other side of this room are the ward, scullery, and bath room.

The walls are plastered and coloured, a painted cement dado being carried round the ward to a height of about 5 feet.

The roof is made of "wood cement," and is almost flat; this form is said to afford the best protection against extremes of heat and cold.

The floor is laid with "terrazzo"; under this flooring are a series of channels 2 feet 6 inches wide, in each of which runs a steam pipe, supported on iron rails. The steam is supplied by a boiler, each pavilion being provided with its own boiler. In addition in each ward are two steam radiators which are connected by tubes with the outer air.

The ventilation of the wards is provided for by windows, and by a ridge ventilator on the roof.

The system of heating the floor of wards is very generally adopted now on the Continent; it is claimed for this principle the following advantages:—(1) that it renders possible the use of an impervious material for the floor surface; (2) that the greatest warmth is at the part needed, that is, nearest the feet; and (3) that the air being constantly circulating the system materially assists ventilation.

The operation theatre is a two-storied building having cellars underneath. There are two operation rooms each with a large semi-octagonal bay, with windows forming each side. On the same floor are two waiting rooms and an instrument room. There is also a special bath room for the surgeon's use. On the upper floor is a large room for the preparation of bandages and dressings. The other buildings consist of the mortuary, waiting rooms, chapel, bacteriological rooms, &c., which do not require any particular mention.

Leaving Hamburg, we went direct to Frankfort, where we were fortunate enough to meet with Mr. Lindley, the consulting engineer to the City of Frankfort, and the engineer of several large works connected with sewerage and water supplies on the Continent. He took an immensity of trouble to show us everything in connexion with his department, and personally conducted us over the works at Frankfort.

Frankfort-on-Main.

*Water Supply.*—One of the most interesting and instructive sights was the new water supply. The old supply was taken from a small river and springs which have their origin in the mountainous range of hills about 14 miles distant. This supply not being sufficient new works had to be constructed and a new source of supply sought for. On this same range of hills, but at a long distance away from the original intake, Mr. Lindley noticed that several small streams at the foot of the hills sunk into the gravel and disappeared. The whole area of ground between the hills and the City of Frankfort is Crown preservation lands and covered with very fine timber. Mapping out by trial borings the contour lines, Mr. Lindley was able to intercept the water which passed through the gravel on its flow towards the river. This bed of gravel is about 100 feet in thickness and rests on blue clay. Trial borings showed that the water level was a constant one, never fluctuating very much, and remained at a depth of 50 feet from the surface.

Just above the level of this ground water, and for a distance of  $1\frac{1}{2}$  miles, Mr. Lindley constructed a tunnel in the form of an egg-shaped sewer, the greater diameter forming the invert; this is lined all through with white glazed tiles, making a perfectly dry, clean, and impervious subway at a distance of 50 feet below the surface. This subway is about 7 feet 6 inches high and about 4 feet wide at its greatest diameter. The direction this subway follows is in the line of the contour lines. At either end is an entrance

by a winding staircase, and half way are the engine and pumping works for raising the water.

This subway contains the water main which commences at the end, being a 9 inch pipe at the extreme end of the subway and gradually increasing to 18 inches at the centre. Connected with this main are tube wells sunk at the distance of one metre (39·37 inches) apart and passing into the gravel to a distance of 45 feet. The ends of the tubes are protected by fine copper gauze wire, which keep back by mechanical action any grit from passing into the mains. 212 wells are sunk in this tunnel.

Mr. Lindley told me he had found, in wells which he had constructed elsewhere, this wire in perfect condition after 16 years.

Rising through the tubes the water enters the main and is then forced into reservoirs without further filtration.

Using this large gravel bed, which is not and cannot be subject to surface pollution, as a natural filter bed was an extremely happy idea. The water passes through about 9 miles of clean gravel, and is then drawn direct for distribution. This is vastly better than the old supply which tapped the supplies at their source, and Mr. Lindley may well be congratulated on utilising this natural filter in the construction of the new supply of water to the city.

The following analysis of this water was kindly given to me by Mr. Lindley; it was made a short time before our visit:—

#### CHEMICAL ANALYSIS OF THE FRANKFORT WATERWORKS.

Substances are expressed in Milligrammes per Litre, Gases in cubic Centimetres per Litre.	Mountain Springs.	
	Aspenheimer Reservoirs.	
	Vogelsberg.	Spessart.
Carbonate of lime - - -	35·36	5·89
Carbonate of magnesia - - -	33·26	2·73
Carbonate of sodium - - -	7·755	2·34
Sulphate of lime - - -	Traces	Traces
Chloride of sodium - - -	4·94	4·92
Alumina and traces of oxide of iron -	1·30	3·81
Silicic acid - - -	28·40	6·00
Ulmic bodies - - -	3·28	1·62
Carbonic acid in semi-bound state -	36·14	4·30
Oxygen in solution, cc. - - -	5·1	5·3
Nitrogen, do. cc. - - -	16·1	17·3
Total of all matters in solution -	114·30	27·8

#### GROUND-WATER SPRINGS, FRANKFORT PUMPING STATIONS.

	1a.	1b.	1c.
Carbonate of lime - - -	13·04	11·10	21·18
Carbonate of magnesia - - -	6·27	5·65	6·69
Sulphate of lime - - -	15·30	9·18	4·71
Chloride of sodium - - -	9·89	6·59	8·24
Alumina and iron - - -	0·82	1·01	1·30
Silicic acid - - -	10·02	13·30	11·41
Ulmic bodies - - -	15·06	8·77	5·87
Carbonic acid - - -	9·00	7·83	12·81
Oxygen in solution, cc. - - -	10·90	9·50	7·70
Nitrogen in solution - - -	21·10	19·70	15·10
Total of all matters in soil -	70·40	55·60	59·40

## SEWAGE WORKS AT FRANKFORT-ON-MAINE.

The sewers in the City of Frankfort were recently reconstructed, and appeared to have been laid with every care. The gradients are good and there were no deposits in the sewers we visited, neither was there any offensive odour noticeable such as would be present if deposits had taken place in the sewers. At the outfall I noticed how complete the scouring effect of the flush water was.

The sewage outfalls are about three miles from the city; they have only recently been constructed at a cost for land of about 200,000 marks, and for works in connexion with the outfall 668,836 marks. The cost of maintaining these works is about 150,000 marks a year; dividing this by the actual population this gives a cost per head of 94 pfennigs, or a little under one mark for each individual.

At the outfall the sewage is received into tanks which are situated under ground. The coarser matters are removed by means of an iron screen, when they are in part broken up, and that which does not pass through is taken away and deposited with the sludge. The sewage falling into a specially constructed chamber is now treated by thoroughly mixing with it a solution of lime and sulphate of alumina in certain proportions according to the character of the sewage. This is tested regularly, the object being to add so much lime as will render the sewage neutral without making it alkaline; the amount of sulphate of alumina added is about 3 grains per gallon, the lime being, as stated above, a variable quantity. The construction of the tanks is peculiar and designed with the view to cause the least expenditure of storage with the maximum results from the precipitants used. The tanks are designedly situated under the surface of the ground at a depth of some 10 or 12 feet, and are arched and completely covered over. This plan is adopted to protect the sewage from cold and to maintain a uniform temperature, which is found to assist the purification largely and to allow subsidence to take place more rapidly. The tanks are long and narrow, and the flow through them very slow. The sewage takes six hours to pass through them; they measure 80 metres long, 2 metres deep at the upper end, and 3 metres at the lower end, and are each capable of containing 1,100 cubic metres of sewage. The velocity of the sewage through the tanks is at the entrance end 5 millimetres per second; the velocity in the inner section being 4 millimetres per second.

The velocity with which the sewage rushes through the basins is so similar to a perfectly calm condition in the tank that the precipitation and mechanical subsidence is in no way hindered, the current in the tanks being slow and horizontal, and the subsidence vertical, so that an opposite stream of water does not exist against that portion of the partially suspended sludge which is slowly sinking down.

The effluent water passes out into the River Maine free from suspended matters and tolerably clear.

It is said that the chemical results obtained from this process is satisfactory; at the same time it is admitted that the bacteriological examinations show a far from pure effluent, as many as three millions of germs capable of development being found in each cubic centimetre of the effluent, a number which is not far below the average in many samples of untreated sewage.

Mr. Lindley intends that the effluent shall be carried on specially prepared land adjoining the sewage works, so as to still further purify it, and this is absolutely necessary. The expense has hitherto prevented his scheme being carried out in its entirety.

As regards the points to be noted as worthy of being specially mentioned, I would name (1) the importance that has been attached to the temperature at which the sewage is kept; and (2) the long and narrow construction of tanks, which, while facilitating a slow and even flow of sewage water, prevent any eddying or back current at the sides, and allows the mechanical subsidence of the suspended matters. The cleansing of each basin takes place every week, so that on every second day one of the four basins is cleaned. The deposit in the basins is very liquid, so that the fall of one metre on the length of the basin is sufficient to bring the discharge to the pumping outlet.

The sludge is placed in open tanks on the surface for the water to soak away and evaporate, when it is sold to farmers or spread on the land. This was the most objectionable part of the process, as the smell arising from these basins was very offensive, and the soakage must foul the subsoil water which enters the river.

The large amount of sludge and the difficulty of dealing with it is well exemplified in this case, and points to the fact that the chemical treatment of sewage is one that must be largely modified, if not altogether superseded by "irrigation," which has been found so successful.

Sewage disposal  
at Homburg.

Homburg has only recently been sewered. The amount of money at the disposal of the authorities was small, and it was impossible to carry out any very large scheme. Mr. Lindley, who advised the municipality, laid down a complete system of sewers, and indeed most of the money available was expended on them, leaving little to complete the system at the outfall; consequently the means for dealing with it at this point are inadequate and rather crude. Homburg is now very well sewered, and the sewage taken to a point about a mile and a half from the town, where it is screened and lime added in the proportion of from 6 to 10 grains to the gallon of sewage; but unlike Frankfort with no regard to the character of the sewage at the time. It is then allowed to flow into tanks where subsidence of the deposit takes place. The effluent is then discharged into a running stream, while the sludge is deposited in tanks and sold to farmers, who are stated to be willing to buy it. At the time of our visit there was a large quantity of this deposit in the tanks, which was most offensive. The effluent water was very impure, and the part of the stream in which it entered showed unmistakable evidence of sewage contamination. This is an exceedingly weak point in the system; but the municipality is said to be so impoverished that it cannot provide otherwise for the disposal of its sewage.

Hygienic  
laboratory at  
Munich.

Unfortunately, when we visited this laboratory the session at the school was closed; but we were shown over the building by one of the heads of the laboratory. It has remained much the same as when first built, a comparatively small room being added for bacteriological research. I was surprised to see so little space given over to this part of hygiene, to which so much attention has been bestowed in France and Germany. The chemical rooms were well fitted up and supplied with material of every sort. From what I could see much more attention had been given to the chemical analysis of soils and to the condition of ground air in soil than to the presence of micro-organisms in the soil.

The diagrams and models used for teaching purposes were excellent; but they evidently are intended to illustrate Professor Pettenkofer's views on the incidence of cholera and enteric fever to the level of the subsoil water. On the whole I do not think this laboratory course has kept pace with the times, and it appeared to me to be rather behindhand in hygienic research.

International  
Hygienic  
Congress at  
Buda Pesth.

The Eighth International Medical Congress of Hygiene and Demography was formally opened at Buda Pesth by the Archduke Charles Louis in the name of the Emperor of Austria on Sunday, September 2nd, 1894. In formally declaring the Congress opened the Archduke said, "That such great international assemblages were a proof of the importance attached at the present day to hygienic questions."

*Diphtheria*.—One of the most important series of papers read at the Congress were the reports upon the prevention and treatment of diphtheria, which was referred to committees of each nationality to investigate and report to this Congress by resolution at the last Congress which met in London.

Professor Löffler, of the Griefswald Hygienic Laboratory, in presenting this report, said that the specificity of the diphtheria bacillus and its value as a means of diagnosis in doubtful cases was now generally recognised, and he advocated strongly the appointment of bacteriologists in every district, to whom should be detailed the duty of making the necessary examinations. He said that it was now proved that the bacillus might be met with in the upper air passages of persons apparently healthy; but as a rule the bacillus ceased to be found very shortly after the subsidence of the local symptoms, although it might persist in a virulent state for weeks and months.

In organic matter not exposed to light the organism could survive for many months, and was especially liable to be found in dark, damp, and dirty dwellings.

As a first means of prevention, cleanliness and dryness of houses with the free admission of air and light (sunlight if possible) were the points requiring special attention. The German Committee also insisted upon the value of frequently cleansing of the mouth and nose with a weak solution of common salt or carbonate of soda, cleanliness of the teeth, the extraction of bad teeth, and the removal of enlarged tonsils were also advised. The German report dwelt particularly on the necessity for compulsory notification, and in addition to isolation and thorough disinfection, and the enforcement of the provision that isolation should not cease until the disappearance of the bacillus had been ascertained by bacteriological examinations.

The report of the American Committee was read by Dr. J. S. Billings. It stated that in 1880 in every 1,000 deaths from known causes 78 were due to diphtheria; whereas in 1890 only 49 per 1,000 were ascribable to the disease. The chief cause of this diminished mortality in America was the recognition of the fact that the disease was spread by contagion and was to be checked by isolation and disinfection. A system of bacteriological examination was already enforced in certain cities in the United States. The results show that 80 per cent. of the cases of croup were true diphtheria.

The report of the British Committee was submitted by Dr. Edward Seaton. He was of opinion that the increased prevalence of the disease in London and the South Eastern Counties of England, and its lighter incidence in North Wales and other country districts suggested that the spread of diphtheria was mainly governed by the habits of the population. The great change to be noted in these habits was the influx of the country population into towns and the collection of children in schools. He insisted upon the necessity of scientific observations and research in matters connected with public health.

The report of the French Committee dealt especially with the importance of the early recognition of the disease which could only be attained by the systematic examination of the throats of children. M. Roux, of the Pasteur Institute, spoke very strongly in favour of the treatment by injection of antitoxin, and stated that by use of this method of treatment the mortality in one of the Paris hospitals had been reduced from 40 to 25 per cent. He advocated the use of this serum as a prophylactic, and the statistics quoted by M. Roux fully bore out the enormous control which this antitoxin has in both limiting the spread of the disease as well as rendering a person immune to the poison.

Two most admirable papers on this subject were contributed, one by Dr. M. E. Roux, "On the Serum Therapeutics of Diphtheria," and the other by Dr. W. Welch, Professor of Pathology in the John Hopkin's University, Baltimore, U.S.A., "On Bacteriological Investigations of Diphtheria in the United States."

Dr. Roux stated that since 1891, with the collaboration of MM. L. Martin and Chaillon, he had pursued investigations on the treatment of diphtheria by the antitoxic serum at first on animals, then on children. The animals furnishing the antitoxin are immunised against diphtheria, i.e., are inured to the diphtheria toxine. Dr. Roux then described the exact mode of its preparation, and how the serum may be best obtained in sufficiently large quantities.

On the 1st February 1894 they first began to treat cases of diphtheria in l'Hopital des Enfants Malades, and their experience extends from February 1st to July 24th, during the months of winter in which diphtheria is frequent and grave, and during the months of summer in which it is rarer. The Hopital Trousseau, another children's hospital in Paris, in which the antitoxin was not employed furnished a basis of comparison.

The total mortality of infants in the diphtheria wards during the last four years averaged 51.71 per cent. From 1st of February to 24th of July 1894 the treatment by serum was employed in 448 infants admitted to hospital, of whom 110 died, or 24.5 per cent. The condition having remained the same, the difference between 51.71 and 24.5 per cent. is the measure of the success by this treatment. During the months of February, March, April, May, and June, 1894, 520 infants were admitted with diphtheria to the Hopital Trousseau, of these 316, or 60 per cent., died. It cannot be said, therefore, that the epidemic during which we experimented had a benign character. During the

same period the cases requiring tracheotomy at the Hospital des Enfants was 49 per cent. against 86 per cent during the same months in the Hospital Trousseau.

The results which have followed the injection of the serum are that the patient quickly improves, the duration of the disease is diminished, appetite quickly returns, and there is little emaciation. The complications following diphtheria become more rare. False membranes cease to increase in the 24 hours following the first injection; they usually become detached in 36 hours to 48 hours, or at latest by the third day. The diphtheria bacillus disappears from the throat at the same time as the false membranes. As a rule, diphtheritic colonies cease to form on the 3rd to the 5th day.

The temperature rapidly subsides under the action of the serum. In the less grave cases the fall often occurs on the day after the first injection; it always occurs by the second day. The defervescence is abrupt, as if the disease had been arrested.

Albumin in the urine is less frequent and shorter in duration among diphtheritic patients treated by the serum.

Dr. W. H. Welch gives an account of the more important results of the bacteriological study of diphtheria.

From May 1893 to May 1894, 5,611 cases of diphtheria have been subjected to bacteriological examination in the City of New York.

In a certain proportion of purely laryngeal cases no diphtheria bacilli will be found in the first culture, and yet will be abundantly present in later cultures. When there is a visible membrane in the throat the examination can be thoroughly relied upon for diagnostic purposes.

The proportion of cases of suspected diphtheria proved by bacteriological examination to be true diphtheria, taking a complete series of 6,158 cases, was 58.5 per cent.

Of 286 cases of membranous croup, in which the membrane was confined to the larynx or bronchi, 80 per cent. were diphtheria, and only 14 per cent. were undoubtedly not diphtheria.

The most common bacteria associated with the diphtheria bacillus is the *Streptococcus Pyogenes*, though others are frequently present. Cases of general streptococcus septicæmia accompanying diphtheria have been observed.

Dr. Park investigated the healthy throats of 48 healthy children in 14 families in which a case of diphtheria had existed and when little or no isolation was undertaken. In 50 per cent. of these, virulent diphtheria bacilli were found, 40 per cent. developed later to a greater or less extent the lesions of diphtheria. In families in which the case of diphtheria was well isolated the bacilli were found in less than 10 per cent. of the children. All members of an infected household should be regarded as under suspicion.

Mr. M. Adams, of Maidstone, contributed a valuable paper on the relations between the occurrence of diphtheria and the movement of the subsoil water. He brought forward statistics extending over nine years in support of the view that the prevalence of diphtheria was closely connected with dampness of the soil.

In this section there were very few papers which related to military hygiene, and many of those read might with great advantage have been discussed in other sections. The Congress was split up into so many sections, in all 26, that many delegates found themselves called upon to be in three or four different sections at one and the same time, and the distances, even when the right road was ascertained, from one section to another were considerable. Thus much time was lost in wandering from place to place.

One of the most important subjects discussed in this section was the possibility of applying antiseptic principles in the dressing of wounds on the battle-field.

The subject was introduced by Dr. Farkas, an Hungarian medical officer, who declared that in practice we must give up all hope of supplying the first dressing of wounds in a scientific manner. It is impossible to do this because the conditions of a field of battle are in nowise suitable. Then the first dressing is not definitive; it is purely a temporary matter, because the consequences of the wounds inflicted by projectiles do not depend on the first dressing.

Dr. Farkas urged the necessity of providing on the field a very large supply of lint and other dressing material: these should consist of small packets suitable for immediate application to gunshot wounds, which are by far the most numerous,

All ambulance waggons should be supplied with an apparatus to sterilise all the material used in the dressing of wounds on the field of battle.

Lessons should also be given during peace time in a simple manner, so as to be readily understood by uneducated soldiers, teaching them to understand that they should avoid as far as possible touching a wound, and that they should not disturb the coagulated blood on and about the wound; that they should not wash the wound with water, and should not touch the dressing placed on the wound.

Dr. Wein, of Buda Pesth, thought it would be sufficient if the bandages, &c. were disinfected by placing them in a strong disinfecting solution and by washing. The object of the dressing was only to permit of the wounded soldier being removed. Nothing more than this should be attempted on the battle-field.

Dr. Macpherson, of Glasgow, said that with the present arms of precision we might anticipate a much greater number of wounded in the next campaign. If the wounded are to receive the benefits of aseptic treatment, not only surgeons, but bearer companies should be thoroughly trained in the practice of asepsis, so that, if necessary, they may be able to do the first dressing and relieve the surgeons of the care of the slighter cases. All must be taught the absolute necessity for cleanliness, and especially of the hands, which should be rendered aseptic by washing in a bichloride of mercury solution before going into action. Instruments, &c., should be rendered aseptic. Dr. Macpherson thought that bichloride of mercury formed the most convenient antiseptic for dressings. If such precautions are followed by the systematic and early evacuation of cases showing a septic tendency there can be no doubt that aseptic surgery on the field will be a success, and that the next European war will show a great reduction in the mortality from preventive causes.

Dr. Frank Clemow, of Cronstadt, read an able paper, and gave many illustrative cases to show how cholera has been disseminated by water—though even now some authorities deny this—while admitting that infected water is a factor which plays an important part, he states that it will not do to set aside the influence of local conditions, which are quite as important.

Mr. Georges Bechman, Chief Engineer of the City of Paris, gave a very interesting paper on the disposal of sewage. He maintains that the drainage of everything into sewers is the preferable and the preferred system. All separate systems that have been advocated have made but little progress, and are only suitable to special cases. Of all methods of disposing of sewage that of irrigation or sewer farms is the best, and the money now spent in emptying cesspools and dealing with other abominations, if converted into a tax, could supply the means for building proper gravitation sewers and the establishment of sewer farms.

Herr Parecz, Deputy Mayor of the Hungarian town of Arad, said that water carriage does not suffice where there is not a sufficient fall, and therefore some special system must be adopted. That is why the town of Arad has followed the example of Eastbourne and many other English towns, of Rangoon in India, and of Toulon in France, and is now applying the pneumatic Shone system to raise its sewage from the lower levels.

Professor H. Robinson read an interesting paper on the action of filters and the purification of sewage and water. He summarised our present knowledge on this point, and said that recent investigation had shown that the removal of organic matter from water was due to the influence of bacteria; but we should not forget the effect of climate in dealing with water purification.

Dr. Finley, of Havana, communicated a paper on yellow fever in which he stated that slight or partial attacks of the disease render a person immune. He also stated that during the last 13 years 90 persons susceptible to yellow fever have been inoculated by contaminated mosquitoes and the incubation of the disease was in 17 cases within 25 days. If the mosquito theory be admitted then measures must be taken to prevent mosquitoes stinging yellow fever patients. This can be done by raising the temperature of the room to 50 degrees centigrade.



A very important paper was contributed by M. Metchnikoff on the bearing of experimental facts on the Epidemiology of Cholera. These experimental facts show that the cholera vibrio is very sensitive to the action of the organisms with which it is associated. Epidemiology demonstrates that certain epidemics of cholera are remarkable by their feeble extension where the small foci of cholera disappear of themselves, without any sanitary effort, while instances are recorded which are the extreme opposite. The explanation lies in the fact that when the cholera vibrio enters the digestive canal which contains favouring organisms, the disease develops easily and leads to a rapid epidemic extension.

When, on the contrary, the favouring organisms are few, or when the digestive organs contain many inhibitory organisms, the cholera finds an obstacle more or less insuperable, and only produces small foci of disease. Local immunity, whether passing or permanent, like seasonal immunity, may be similarly explained. The freedom from cholera of certain districts cannot be attributed to the impossibility of the cholera vibrio penetrating and living there, but must be explained by the absence from the digestive canals of the inhabitants of a sufficient quantity of favouring organisms. M. Metchnikoff maintains that the specific vibrio, swallowed by persons the microbial flora of whose digestive canals are unfavourable to its growth, does not produce cholera, and gives as a proof of this the fact of the presence of the cholera vibrio in drinking water at a time when there is no epidemic of cholera (as in the pollution of the Seine in the spring and summer of 1893), which can be only explained by this theory. The vibrios of the Seine in 1893 did not provoke cholera, not because of their insufficient virulence, but because the microbial flora of the inhabitants was unfavourable for their cholerigenic action. In his expression of opinion against the theory of the water carriage of cholera, Pettenkofer and his followers produce facts as to the extension of epidemics which do not correspond faithfully to the distribution of potable water. The microbic influences explain this. The water contaminated with cholera vibrios has not produced cholera, owing to the obstacle presented by opposing organisms. When the flora of the digestive canal is favourable to the cholera vibrio, epidemic extension of the plague is easy; when not so, only isolated cases occur.

This theory implies a certain localisation of the microbic flora. Formerly it was supposed that the cholera vibrio itself, which was an exotic organism and very short-lived in our climates, was similarly localised. Numerous facts now show that this hypothesis is untenable. The cholera vibrio adapts itself well to conditions of existence, which are different from those of the Delta of the Ganges, and can live a long time in our latitudes.

Little is known of the flora of the human stomach, still less of that of the small intestines; a study of these is necessary before we can have a precise idea of the conditions under which the cholera vibrio lives in the digestive canal.

The general conclusion arrived at is that in cholera, a disease due to the specific action of Koch's vibrio, the favouring and impeding microbes of the digestive organs play an important rôle, and that we can thus explain certain epidemiological facts which appear to be out of accord with the theory of the specific action of the comma bacillus, and above all the influence of time and place, which play an incontestable part in the development of epidemics.

The delegates to the Congress appointed by the various Governments to consider the possibility of arriving at some uniform system in the preparation of military medical statistics held a series of meetings in the Military Casino to discuss this important subject. A synopsis of their proceedings is appended, from which it will be seen that the matter is being very seriously regarded by all the great Powers. Considering that this is a question of far-reaching importance, not only as regards the purely military services, but also with reference to the attainment of accurate facts relating to the spread and prevalence of many diseases both in armies and civil populations, it is to be hoped that a concrete scheme of simple statistics may be soon promulgated and accepted by the nations as a basis for international knowledge. This being a matter of some complexity it is obviously one which cannot be hastily worked out; but the preliminary interchange of views arrived at in Buda Pesth were so encouraging that no difficulties are anticipated in carrying the proposals to a successful issue.

SYNOPSIS OF PAMPHLET on the PROCEEDINGS of the INTERNATIONAL  
MEDICAL (MILITARY) COMMISSION for the ADOPTION of an UNIFORM  
SYSTEM for MILITARY MEDICAL STATISTICS.

List of Members given on the first page.

Deputy Surgeon General Billings, U.S.A., elected President, and Dr. Myrdacs (Austria) elected Secretary. Proceedings,  
September 3rd,  
1894.

Dr. Grossheim gives notice that the resolutions of the Commission are not to be considered as binding on the Prussian War Ministry, but only as affording information. Messrs. Billings, Rapschewsky, and Notter concur as regards their Governments.

- (1.) Motions by the Secretary, unanimously adopted :—" That every army " should annually publish a printed report on its sanitary situation."
- (2.) " That these reports should be regularly interchanged amongst all armies."

After some discussion as to whether to include statistics as to recruits' physique in these reports, it was resolved that—

- (3.) " The various Governments should be recommended to publish annually " the results of the physical examination of recruits."

(4.) Dr. Rapschewsky in the chair. As to including naval medical statistics in the above reports, it was settled that naval medical reports should be interchanged as far as possible, but that, owing to the difficulties arising from ships often being at very distant stations, no further action should be taken in this direction. September 4th,  
1894.

- (5.) On the question as to which date was to begin the year for the annual reports, it was settled that the date should be the 1st January (solar year). It was then agreed that the Commission should discuss the form and minimum contents of the proposed report, leaving the different armies to fill up the details according to their respective circumstances.

- (6.) Proposed and carried that recruiting statistics should be divided under headings according to districts, &c., and not merely according to countries.

- (7.) The headings to be :—

- (a.) Number of recruits brought up for examination.
- (b.) Number of those found fit for service.
- (c.) Number of those rejected on account of not coming up to standard (5' 4" for English recruits—in other countries not over 4' 10½" = 154 cm.).
- (d.) Height of those accepted for service, in series of 5 cms.
- (e.) Defects of those rejected.

As regards (d.), Messrs. Billings and Notter agree that these tables would be of no use in England or America where there is no conscription. Agreed, therefore, that this heading shall only refer to countries which have universal conscription.

- (8.) Proposed and carried that sanitary statistics are only to refer to non-commissioned officers and men.

- (9.) That in reckoning averages men in hospital are to be included in the total strength of a corps.

- (10.) M. Dziewonski (French army) in the chair. On the question of subdividing sickness and death statistics under various headings, a long discussion arose, with the result that the following headings were adopted :— September 5th,  
1894.

- (a. Division.)—According to army corps or divisions, not according to branches of service.
- (b. Division.)—According to nationalities; this is optional.
- (c. Division.)—According to garrisons and climates as far as possible.
- (d. Division.)—According to whether illness occurs in the first year of service or not, specially with reference to infectious diseases.

- (11.) For each of the above headings the statistics are to be compiled with reference to (a.) the average strength of the corps; (b.) admission to hospital invalid patients, hospital patients; (c.) discharge from hospital, death, fit for service, otherwise disposed of.

This proposal was adopted, with the reservation that the division of (b.) was to apply optionally according to the army concerned.

September 6th,  
1894.

- (12.) Dr. Grossheim (Germany) in the chair. Agreed that the number of days in hospital in each corps should be inserted in the statistics.  
(13.) That deaths through suicide or accident should be separated from those resulting from sickness.  
(14.) That the number of cases per 1,000, and exceptionally per 100,000 should be taken as a basis.  
(15.) That reference in each case should be made to:—  
(a.) Date of arrival in hospital.  
(b.) Date of discharge from hospital owing to death, (β) fitness for service, or (γ) other reasons.  
(c.) Number of days treated.

The question of nosological tables was then gone into with the result that the diseases are to be tabulated as on page 23 of the pamphlet.

September 7th,  
1894.

- (16.) Agreed also that the different members of the Commission should request their respective Governments to continue to them their present powers as representatives, in order that they should, by means of correspondence with each other, settle the remaining necessary details, and perhaps even at some future date meet again for the same purpose.  
(17.) Dr. Sforza and later Dr. Notter in the chair. After a lengthy debate on the subject of noting the age and number of years of service of men who die in hospital, a scheme was proposed and adopted by which deaths are to be tabulated under five heads:—

1. Those which occur in the first year of service.
2.       "       "       any subsequent year of service.
3.       "       "       between the 20th and 25th year.
4.       "       "       "       "       26th and 30th year.
5.       "       "       after the 30th year.

- (18.) Agreed that the Secretary (Dr. Myrdacz) should work out in detail tables based on the foregoing broad resolutions.  
(19.) That in the event of the ratification of (16.) by their respective Governments, Dr. Billings should be chosen President and Dr. Myrdacz, Secretary of the permanent Commission thus formed.  
(20.) Votes of thanks to General Stabsarzt Paikart for installing them in their place of meeting, the Military Casino, and to the Secretary for his valuable services.

Garrison  
Hospital at  
Buda Pesth.

During our stay at Buda Pesth we were invited to visit the military hospital at Buda.

This hospital affords accommodation for about 500 sick; the buildings are lofty, but they are placed too close together notwithstanding that there is ample space all around. As regards the internal construction of the hospital there is nothing particular to note. One of the most objectionable features in the arrangements of the hospital administration of the Austro-Hungarian Army is that the sick wear their military clothing in the wards as they are not provided with an exchange of clothing on admission to hospital. The ventilation of the wards depends entirely on open windows.

The number of cases of trachoma under treatment greatly astonished us; nearly 50 per cent. of those in hospital were admitted for one or other form of ophthalmia; venereal diseases are the cause of a large number of admissions; but secondary syphilis does not appear to assume anything like so virulent a form as we are accustomed to see at Netley.

The cooking in the hospital and the supply of provisions is done under contract. The diets we saw were very good, both as regards the quality and cooking of the food, but the system is one that is open to objection for obvious reasons.

Although the ophthalmia cases were treated in open huts, the men appeared to me to be placed too close together for such an infectious disease. Isolation was not by any means as complete as we should insist on in the British Army. The men I saw under treatment were all weakly men and apparently somewhat underfed. It would have been interesting to inquire into the causes of the prevalence of this disease, but I had no opportunity of doing so.

On our return journey to England we took the opportunity of visiting the sewers and sewage system recently adopted in the City of Paris. The disposal of sewage was recently the subject of much discussion in the National Assembly, and the plan now brought into use is the one sanctioned by that Assembly. It is estimated that the present sewage of Paris amounts to 375,000 cubic metres (82,500,000 gallons) per day, and to this there should be added 50,000 cubic metres (11,000,000 gallons) of sewage from the immediate suburbs, making in all 425,000 cubic metres (93,500,000 gallons) of sewage to dispose of daily.

Drainage of Paris.

The question which had to be decided was how best to dispose of this enormous volume of water. It was shown by analyses that chemical treatment had failed; that the various processes only delayed putrefaction which was certain to follow on at a later period, and that as yet chemistry had failed to solve the problem. There were only two means left for adoption, (a) either to construct a sewer sufficiently large to carry all the sewage to the sea, or (b) to use the sewage for agricultural purposes in the neighbourhood of Paris. It was pointed out at the time the danger which exists in emptying the sewage into the sea, as it is thrown back on the foreshore, unless it is sent in at particular states of the tide, and this necessitates the construction of large reservoirs to receive the sewage in the intervals and in which there would of course be collected a large quantity of sludge, provision for the disposal of which would have to be made. The French engineers insisted that the only feasible plan was to restore to the soil the fertilising elements which are present in sewage.

Acting on this principle, the sewage farm at Gennevilliers was established, and we visited this in company with one of the assistant engineers. This sewage farm is in the immediate neighbourhood of Paris and about six miles from the centre of the city. The sewage is distributed through little trenches 2 to 3 inches in depth and separated by beds of from 4 to 13 feet in width. The sewage is thrown from these trenches on to the beds. It is stated, and we saw, that little remains except a thin crust of organic matter in the form of humus. Vegetables, grapes, fruit trees, and various shrubs are grown in perfection in these gardens, and there is not the smallest odour noticeable. The water in the effluent was particularly clean and bright, and it is stated that it is used by some of the inhabitants in preference to the shallow wells which supply the neighbourhood. Fish were to be seen in the clear stream which receives all the effluent and which flows out at the bottom of the garden.

The sewage as it is collected at the pumping station is screened by passing through coarse sieves, which break up a very large portion of the solid matter and holds back only such portion as would not be applicable to treat by filtration through land. This, which constitutes a small bulk, is carted away, part is ploughed into the land, and part destroyed by fire in a destructor. The remainder is pumped on to the sewage farm and is utilised there. The farms are well managed, and although there is a population of 6,000 persons living in close proximity there has been no epidemic disease among them and they enjoy excellent health.

One important point in carrying out this system is that the sewage must be brought to the land in as fresh a state as possible. The drainage of the land is also most carefully carried out. 2-inch pipes are placed at 3 to 4 feet below the surface, and from 16 to 25 feet apart; they are bedded on puddled loam, and surrounded with the same at the joints to prevent their being blocked up with fine sand, &c. These empty into a larger drain in size about 4 to 6 inches, and their depth depends on the smaller drains or "feeders"; these again empty into the effluent ditch.

It has been said that as time goes on the soil on sewage farms will become more and more incapable of purifying the sewage, as the pores of the land will become gradually choked up with grease and sedimentary matters. These

sewage farms entirely refute this theory, since they prove beyond a doubt that if the land is well managed it never loses its power of purification.

The reports show that there is no evidence that the sewage farms had any detrimental effect on the health of the cattle kept on them, or on the adjoining land ; they are particularly free from disease.

Much has been said and written for and against sewage farms and the question whether chemical treatment or application to land is the better way to dispose of sewage. The real question is not so much whether sewage farming or chemical treatment is theoretically the right way to dispose of sewage ; but rather whether *in a particular case* the one method is more likely than the other to give good results, as every case requires to be dealt with on its own particular merits.

## APPENDIX No. IV.

REPORT ON THE EIGHTH CONGRESS OF THE "ASSOCIATION  
FRANÇAISE DE CHIRURGIE," HELD AT LYONS, SEPTEMBER  
8TH TO 13TH, 1894, WITH SET OF DIAGRAMS.

By Surgeon Lieut.-Col. W. S. PRATT, M.B., Army Medical Staff.

The Eighth Congress of this Association was held at Lyons this year instead of at Paris, where all the previous meetings took place. The chief officials of the Bureau du 8me Congrès were—Président, Le Professeur Tillaux, membre de l'Académie de Médecine, chirurgien des hôpitaux, Paris; Vice-President, Monsieur Guérin, chirurgien honoraire des hôpitaux, and General Secretary, Le Docteur Piqué. The local committee included Honorary President, the Mayor of Lyons, Professeur Gailleton, ex-chirurgien de l'Antiquaille; President, Professeur Ollier, chirurgien de l'Hôtel-Dieu.

The meetings were held in the Theatre of the Faculté de Médecine.

The proceedings were opened by Professeur Tillaux in a very able and interesting speech. After a few felicitous opening remarks, he proceeded as follows:—"I am certain that I am only expressing the thoughts of the members of this Congress in saluting, first of all, this grand and noble city of Lyons, whose history is so intimately bound up from the earliest times with the arts and sciences, with literature, commerce, and civilization generally. Confining ourselves only to the subject of surgery, it was here that Guy de Chauliac published his 'Grande Chirurgie.' Here also Lanfranc collected the materials for his 'Chirurgie Parva et Magna.' The immortal Rabelais practised medicine here in the 16th century, and in the first quarter of that century the beautiful work of Jehan de Vigo appeared. Moreover, on the introduction of the art of printing, Lyons supplied a large portion of Europe with books. At this epoch surgery played a very inferior rôle. In the 'Statuts de Lyon,' 1576, we find it ruled that surgeons could neither bleed nor administer medicine without the authority of a doctor. This humiliating state of things lasted for centuries. Even at the end of the 18th century Desault, of the Hôtel Dieu, Paris, could not perform any serious operation without the assent of three physicians and in the presence of at least one. However, surgeons began by degrees to assert themselves. A special school of surgeons was founded at Paris in the beginning of the 18th century, and in 1731 was founded the celebrated Royal Academy of Surgery with J. L. Petit as first director. The surgeons of Lyons quickly entered into close relations with this Academy, and became corresponding members thereof. Although the surgeons had by dogged perseverance attained to a better position than their predecessors, the barber surgeons, there still existed a marked line of separation between medicine and surgery, the latter being considered a merely manual art. Then came the great and fruitful Revolution, which destroyed at one blow the whole medical edifice so laboriously and artificially constructed. Both the Faculty of Medicine and the Royal Academy of Surgery disappeared in the revolutionary whirlpool. Nevertheless, doctors were needed, more especially in the army of France, which was being attacked on all sides. It was then that the National Convention created 'L'École de Santé,' which was installed in the place of the old Academy of Surgery. The course of instruction now comprised every branch of the art, much resembling our present curriculum. We now come

" to the modern period, in which Lyons still continued to hold a predominant position. In the first instance we note Antoine Petit, who founded the Medical Society of Lyons, then Joseph Gensoul, and above all Amedée Bonnet.

" The surgeons of our present day have assisted at a transformation almost incredible to those who remember the previous state of things in our hospitals. In the old days erysipelas and hospital gangrene were endemic in the hospitals, and the mildest operations were accompanied by serious risk to life. To-day, owing to the advance of antiseptic surgery, these great enemies have disappeared. Operative surgery has attained a very high degree of perfection, but at the same time we must be careful to keep before us as a guiding principle that the *most important point of all is diagnosis and the knowledge of when to operate*. The physicians and surgeons of to-day should work together, not separately, towards their common goal, the good of humanity."

There then followed a discussion on different surgical topics, amongst others on Congenital Lipoma by M. Lannelongue, of Paris; on the action of Chloroform on the Heart by M. Guerin, of Paris; and a very interesting paper on operations for Goitre by M. Roux, of Lausanne. On resuming the séance in the afternoon the subject of cancer and its etiology was discussed. M. Bard, of Lyons, was of opinion that the differentiation of malignant tumours in a pathogenic sense is wrong, whatever their origin or structure. All the tissues of the body may engender cancer, and there is no reason for applying this term to epithelial tumours. Each cancer owes its origin to a young cell endowed with an exaggerated power of reproduction, and the cell may attack each tissue. It is this extraordinary vitality which differentiates the cancer cell from the normal cell. He entirely repudiated the microbic theory of cancer. A discussion followed in which very divergent opinions were expressed.

After this came a supplementary séance, the subjects being diseases of the genito-urinary system, surgical affections of the neck and chest, and operations on the nerves and muscles.

The following morning, 10th October, at nine o'clock, I visited the great hospital of the Hôtel Dieu. This grand hospital, with upwards of 1,000 beds, was founded in 542 by Childebert, Roi de France. It was built for the use of the sick poor and for sick travellers, and up to the present day still opens its doors to the sick and wounded of all countries irrespective of nationality or place of residence. Poor travellers also receive board and lodging for three days at a time. The nursing service of this hospital, as well as of the other hospitals at Lyons, is carried on admirably by a body of "infirmières," who are called "sisters of the sick poor." Their organisation is a purely civil one, and is attached to no religious order, but the members voluntarily submit to religious rule. They take no vows, use their own names, and can resign their appointments at pleasure. They are supplied with a sort of uniform by the hospital authorities, and receive a yearly sum of 40 francs. They receive also instruction in the different branches of their profession, and obtain various "brevets" or gradings as "herberistes," "sage-femmes," &c.—these latter being divided into first and second class midwives. The first thing on arrival we were received by one of the hospital surgeons, who explained the methods used to elaborate the practice of antiseptic surgery. Each patient on admission is examined, and then given a ticket stating whether he is to go into the antiseptic wards or not. These wards are kept entirely distinct, and the surgeons, dressers, and nurses have to take elaborate precautions, such as putting on long antiseptic gowns, and making careful ablutions before entering the wards. The arrangements for keeping the instruments aseptic are very complete. They are placed in superheated glycerine before use, and are kept in air-tight glass cases with glass shelves. There is also a steam sterilizing apparatus in the hospital, and all surgical dressings, lint, bandages, &c., &c., are first carefully rendered aseptic and then placed in a copper box, which is locked and sealed, and can only be opened by the surgeon when required for immediate use. This prevents any handling or tampering with the dressings before use. A new kind of metal suture was also shown. This is made of soft iron, nickel plated, and appears admirable in every way, the cost being exceedingly moderate. The arrangement of the beds in the wards seem hardly satisfactory, there being white curtains and hangings, which seem out of date.

We next proceeded to the operating theatre, where M. Ollier showed a series of most interesting cases, illustrating the satisfactory results of the operation with which he has identified himself—sub-periosteal resection of bones and joints. This lecture was of peculiar interest, as M. Ollier has contrived to keep in touch with many of the cases he operates on. Thus several patients were produced, showing the results of the operation after a period of 20 years. One case of excision of the head and upper third of the humerus, for tubercular disease complicated with syphilis, was peculiarly instructive. The patient had a sound and useful arm, and the excised bone was carefully preserved and shown at the same time. Some of the results of excision of all or some of the carpal bones of the wrist were simply astonishing. In the afternoon I was honoured by being asked to sit as president during the séance. The subjects under discussion were the surgery of the stomach and intestines, and of the face and cranium. Amongst the latter a very interesting case was shown by M. Hassler, Médecin-Major of the École de Santé Militaire. The patient had attempted suicide by firing a Gras rifle into his mouth. This resulted in frightful injury and deformity. The lower and upper jaws fractured, the teeth destroyed, the roof of the mouth and the nasal bones completely disorganised, and the muscles and skin of the cheeks and face charred and lacerated. The injuries have been gradually repaired, the teeth and palate artificially replaced, and a nose formed by rhinoplasty. The great difficulty was experienced in forming a bridge to the nose, and M. Hassler contrived a very ingenious steel support for the purpose. The case demonstrates the powers of plastic operations to repair injuries to the face, which without this resource would render the sufferers permanent objects of horror and disgust.

The next day, October 11th, many of the members of the Congress went to Aix-les-Bains on an excursion. I did not accompany them, but visited the Exposition de Lyons. There was a very interesting exhibit by a M. Écot, Médecin-Major de l'École de Santé Militaire, illustrating different methods of utilising portions of men's equipment and articles in general use for improving splints, lamps, &c. for service in the field. He employs the ration tin carried by soldiers, which is cut into thin strips, also the wood of packing cases for biscuits in forming splints of various kinds. By the method, also well known in our army, of cutting glass bottles by friction he contrives a useful double lamp and various other articles. The accompanying design merely shows the idea and is not intended to be absolutely a correct copy.

On Friday, the 12th, in the morning, the discussion was principally confined to fractures of bone and operations thereon, and in the afternoon the second question of the day, officially sanctioned by the Congress, was brought forward. This was a report on the present state of surgery as applied to the spinal column, and was introduced by M. Kirmisson, of Paris. He began by saying: "Now that antiseptic surgery is firmly established the field for operative interference is widely increased. With regard to injuries of the spinal cord and vertebræ, the results published by M. Chipault are scarcely encouraging, out of 150 cases in which operative interference by resection of one or more vertebral arches was attempted, there were 12 recoveries, 24 slight improvements, and out of the remainder 80 deaths occurred. Even in cases where after fracture of a lumbar vertebra an operation has been successfully performed, with slight hæmorrhage, and where there was no apparent injury to the cord itself the patient died in five days. In cases, however, of injury lower down, which are followed by paraplegia from pressure, Dr. Thorburn quotes two cases in which a cure was obtained on removal of the cause of compression. In fractures complicated with wounds, such as from firearms, Mr. Walter Pyle relates the following case:—A young man was wounded by a bullet in the vertebral column, the entrance wound was situated at the level of the last dorsal vertebra. One hour after being struck there was complete loss of movement in the lower limbs, though sensibility remained unimpaired. During the day sensibility was entirely lost below the knee, and there was complete paralysis of the bladder and rectum. Later on the paralysis became more extended showing the existence of hæmorrhage within the vertebral canal. An operation was decided on; a piece of bone was found which had penetrated between the last dorsal and first lumbar vertebræ, there was extravasation of blood in the canal, and the



"cord showed evident traces of contusion. The results of the operation were most satisfactory. We may take it, then, as a rule, that in fractures of the vertebræ, where portions of the arch are forced in and press on the cord, an operation for relief is indicated. In cases also of partial dislocation, also, where prudent and careful attempts at reduction have failed, we should not hesitate to operate, remembering that the injury to the cord is likely to be less sharply inflicted than in the case of a penetrating wound or a fracture. Many successful cases of this nature have been published by Boyll, Arbuthnot Lane, and others.

"Now as regards Potts' disease. This may be divided into two categories, those in which the aim of the operation is directed against the disease of the bone itself, in order to eradicate the tubercular virus, and those where the object is to relieve the paraplegia.

"In the immense majority of cases any operation on the bony structure should be avoided as useless or worse than useless. Absolute rest and the ensurance of complete immobility of the parts offer by far the best chance of recovery. This fact is illustrated by numerous examples. In cases where profuse suppuration exists iodoform injections form the safest and most useful treatment. It is only in cases where the tubercular lesions are on the posterior part of the spine, where the alterations of the bone are easily accessible, or where the anterior portion of the spine is affected and iodoform injections prohibited, that operative interference is justified.

"Another question arises when paraplegia exists, where the danger is so threatening, or where pain renders the patient's life intolerable. Here operation is frequently rendered necessary, though it must be admitted that the results are the reverse of encouraging or satisfactory.

"In cases of neo-plasms or tumours of, or pressing on the cord, if it is certain the disease is not syphilitic, operative interference may be considered.

"In spina-bifida the operation of excision appears to offer the best chance of success.

"In conclusion, in spite of all our modern improvements and increased knowledge, the surgery of the spine is still full of unsolved problems, full of the most formidable difficulties, and dependent in a great measure upon chance circumstances." A series of interesting papers on the subject were then read and discussed.

On the morning of the 10th there was a repetition of M. Ollier's cases of sub-periosteal surgery at the Hotel Dieu, and in the afternoon the final sitting of the Congress took place, the subjects under discussion being mainly the surgical diseases of women.

#### THE "ÉCOLE DE SANTÉ MILITAIRE."

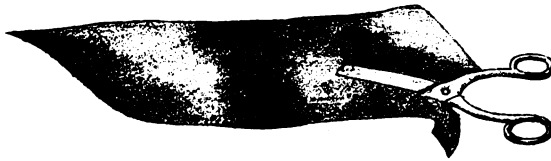
Through the kindness of the Director-in-Chief I was permitted to visit this admirable institution. I venture to give a short history and explanation of its working, in contrast to the system of training medical officers for the British Army.

The "École de Santé Militaire" replaces the school that was established in 1853, and came to an end after the war of 1870. The new school was founded in 1888. It is temporarily established in the military hospital of Besenettes, but the new buildings are nearly completed. The object of the school is to ensure the supply of surgeons for the army, to assist them in their university studies, and to give them a military education prior to their admission to the final military medical school at the Val-de-Grâce at Paris.

From 1871 to 1888 several methods of obtaining army surgeons were tried. From a scientific point of view the results were fairly satisfactory, but the methods of study were found not to give the necessary practical knowledge, and the military training was absolutely insufficient, more especially since the law passed in 1882, making the army medical department completely autonomous under its own chiefs. By this law the medical officers hold the military command over all ambulances, hospitals, &c., and over the military personnel thereof, as well as over all sick and wounded under their care. Hence the necessity has arisen for a military education extending over several years, commencing at the "École de Santé Militaire" at Lyons, and terminating at the Val-de-Grâce at Paris. The young candidates are received at the École

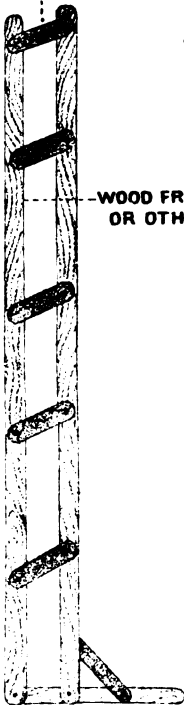


RATION TIN CARRIED BY SOLDIER

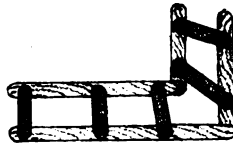


TIN ROLLED OUT AND CUT INTO SECTIONS.

SECTION FROM TIN

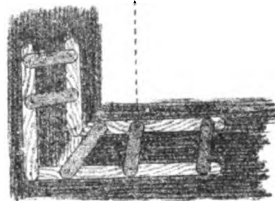
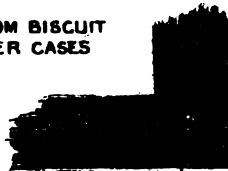


LEG OR THIGH SPLINT



ARM SPLINT

WOOD FROM BISCUIT  
OR OTHER CASES



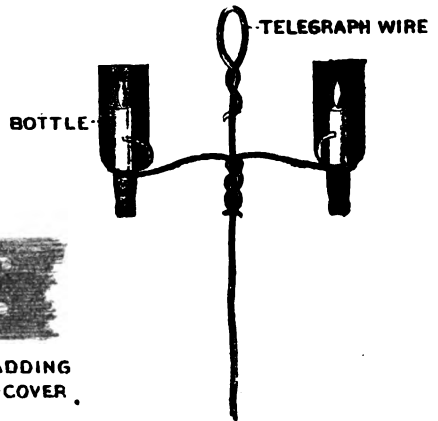
ARM SPLINT WITH PADDING  
OF STRAW BOTTLE COVER.



STRAW COVER TO BOTTLE



LAMP FORMED BY TIN



*These diagrams are not to be considered as accurate copies, but merely to illustrate the idea.*



de Santé after passing an examination. They must be under 22 years of age, and must have the first examination for the degree of "doctorat en médecine," which takes place at the end of the first year's study at a Faculty of Medicine. At the last examination for l'Ecole 300 candidates presented themselves, and 60 passed successfully, or a proportion of 1 in 5. This is about the usual percentage of successful to rejected candidates at the military schools of the Polytechnique and Saint-Cyr. The young students pass their second, third, and fourth years of medical and surgical study at the school, and when they have passed all their examinations at the "Faculty of Medicine," and have obtained their qualifications to practise as doctors, they enter the final military medical school of Val-de-Grâce.

Their time at the École de Santé is fully occupied. They rise at an early hour. After general inspection they attend the classes of the Military Hospital. From 9 to 11 o'clock they attend clinical and other lectures at the various civil hospitals. Then comes "déjeuner," after that a short time for recreation, and then they return to study at the various classes and clinics of the Civil Faculty of Medicine. In addition they are taught fencing, infantry drill, military riding in the manège, &c. The bugle sounds for dinner at 6.30, and after dinner they study up to 10 o'clock. The reputation of the school is exceedingly good, and the course of instruction gives highly satisfactory results.

When the young surgeons eventually join their regiments they prove themselves to be most efficient medical officers. This is greatly due to the military training and discipline they have undergone. This ensures prompt obedience and strict regularity of routine, as well as a thorough knowledge of military hygiene and administration.

The interior discipline of the school is severe, no slackness or irregularity is for a moment tolerated, and the frequent drills, gymnastic and other military exercises, riding school, &c., ensure a sound degree of physical development.

"L'École" is commanded by a "Médecin-inspecteur;" under his orders is a "sous-directeur," who superintends the studies as well as the military hospital for instruction. Then come a médecin-major lière classe, and other military medical officers called répétiteurs." These latter are selected for exceptional ability, and superintend the clinical and other instructional courses of the students.

There are also medical officers called "Médecins surveillants," who have the somewhat delicate and difficult duties of looking after the moral, scientific, and military life of the students. Military instructors from the garrison are provided to teach drill and equitation. There are also civil professors for history, literature, and German.

At present the new buildings are now approaching completion, and by the kindness of some of the officers I was permitted to go over them. The building is a handsome one, in close proximity to the "Faculté de Médecine." There is a fine installation of electric light for the whole building. There are lecture rooms, laboratories, &c., with a dining hall and other accessories. There is a fine open ground in the centre of the buildings for drill and other purposes, and a large riding school or manège. The younger students occupy dormitories holding six beds with a separate study for each six students, whilst those in the senior class have one room for each two students, the room also serving as a study. There are at the school 240 students in all, 60 in each division, and on the 1st of February each year 60 pass to the finishing military medical school of Val-de-Grâce at Paris.

It is interesting and instructive to see what care and attention and money are lavished by the French nation in the education of their military medical officers, showing how much they realise the fact, as practical soldiers, that a well-educated, well-disciplined corps of medical officers is absolutely essential to the safety and well-being of an army.

APPENDIX No. V.

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**A REPORT ON THE EPIDEMIC OF BUBONIC PLAGUE, WHICH OCCURRED IN HONG KONG IN THE MONTHS OF MAY, JUNE, AND JULY, 1894, WITH SIX DIAGRAMS.**

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By Surgeon-Major H. E. R. JAMES, F.R.C.S., Army Medical Staff.

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This report is based upon my experience derived from a personal observation of the sick and of their surroundings, throughout the epidemic, and from a constant communication with others who have been working in the hospitals and houses, and at the bacteriology of the disease.

I was attached to the Permanent Sanitary Committee from the date of commencement of the epidemic in May, and acted under their instructions, under the Colonial Surgeon, by order of his Excellency the General Officer Commanding and performed executive duties in connexion with the inspection of cases and corpses, house-to-house visitation, visitation of villages, and inspection of houses. In June I was appointed a member of the Permanent Sanitary Committee, still performing executive work, and at the end of July ceased executive work still retaining my seat on the Sanitary Board and Permanent Sanitary Committee. Thus I have been in touch with the organization and execution of work in connexion with the plague, and had opportunities of observation of all circumstances connected with the outbreak.

The report is, I fear, in many respects a very imperfect one, as the complete history of all that has led up to the present bad sanitary condition of Victoria would be too voluminous to include in it, and my work has not been that of treating cases throughout; so that others can give a more perfect account of the course of the disease than I. The reticence of the Chinese and their obstructiveness have caused many points which might have been of value as to the tracing of the plague to this place, and the tracing of individual cases to their origin, to be lost; but, on the whole, I believe the conclusions arrived at are well founded, and that a distinct addition to the knowledge of this disease has been acquired during its visitation here.

I have endeavoured to divide the subject into three parts.

I. Records of known outbreaks of the disease, and a history of the present epidemic.

II. A description of the disease as it occurred here.

III. An account of the insanitary conditions found here, which favoured its ravages, and prophylactic measures, both personal and general.

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**PART I.**

The plague now under consideration is undoubtedly the Bubonic Plague of history; and such deviations from type and modifications as have occurred in it are probably racial and climatic.

It seems to have certain favourite visiting places, and to have almost invariably recurred in every place which it has once visited.

Certain peculiarities of meteorological conditions have generally preceded outbreaks, and epizootic diseases of (generally) domestic animals have often been previous to, or coincident with, the epidemic.

The first historical notice of the plague refers to an epidemic in Libya, A.D. 98; but there are references in much more ancient writings to pestilences whose nature is not described, but which were rapid and destroyed large numbers of people in a few days. It occurred in Egypt and Syria and extended to Asia and Europe in the 6th century, and was established in Europe for 1,300 years. A variety called the "Black Death," supposed to have originated in North China, was rife in the 14th century. In the 15th century the plague occurred frequently in North Africa, Egypt, West Arabia, Syria, Asia Minor, Mesopotamia, Persia, India, China, and Europe. In the 17th century it lessened in area, disappearing from Italy, England, West Germany, Switzerland, Netherlands, and Spain. In the 18th century it continued to decrease, only two outbreaks occurring, one in 1703 in Turkey, Hungary, Russia, Poland, Austria, Bohemia, and East Germany, and the other in Provence.

In 1841 it ceased in Europe.

In 1843 it had ceased in Africa, except Egypt, and in 1844 it ceased in Egypt.

The later records are :—

1853.	West Arabia.
1858-59.	Tripoli in North Africa.
1863.	Persian Khurdistan.
1867.	Right bank of Euphrates.
1870.	Persian Khurdistan.
1871-73.	Yunnan.
1873-74.	Left bank of Euphrates.
1874-77.	Bagdad, Euphrates Valley, West Arabia, Tripoli.
1876.	Persia, S.E., near Persia Caspian, N.W. India.
1877.	S.W. Caspian, Transcaucasia, Astrakhan.
1878.	Persia, Khurdistan, Astrakhan.

From this list it will be seen that it shows a tendency to recur in places where it has been once rife, and to be carried by trade routes from these centres. The considerable communication by crusades and pilgrimages between Christian Europe and Palestine on the one hand, and Mahomedan Asia and Arabia on the other, the former during the Middle Ages and the latter later, have probably served to convey the germs to the homes of pilgrims, as is the case with cholera. A careful consideration of the events of the various epochs would, I think, trace its carriage in every case to the affected district from one or two spots where it is, or has been, endemic, e.g., the Euphrates Valley and Southern China. It appears to be confined to the northern hemisphere and only to flourish between 20° and 40° north of the equator, and not to have existed in the new world at all hitherto.

It seems almost superfluous to state, in conclusion, that the disease is a *specific disease*, caused by a specific, portable organism, which has a variable length of life, according to the conditions in which it finds itself, and a varying virulence, also influenced by these conditions.

It is inoculable on certain mammals, and produces in them a disease similar to that seen in human beings, and, no doubt, can be communicated by animals to human beings; and it becomes epidemic and is communicated by person to person, under insanitary and squalid surroundings, and during unfavourable meteorological conditions, such as prolonged drought, &c.

Every step of its course here has been corroborative of its contagiousness and its choice of the poorest classes as victims; and of the great preventive power of good ventilation, good food supply, and absence of overcrowding.

As proofs of its being contagious and not atmospheric, conveyed by persons and not originating *de novo* in the soil, and finally due to a microbe which decreases in virulence by continuous cultivation from the parent stock, I adduce the following facts :—

1. The disease is endemic in the province of Yunnan and cases occur every year there, those attacked having buboes with but little constitutional disturbance, and all recovering. After a prolonged drought it assumes a more virulent form, and then becomes epidemic, the persons attacked generally dying. People residing in the same house as the victims very generally contract the disease.

Therefore it is of varying virulence, and generally contagious.

2. Other provinces not having communication with an affected place, but similarly suffering from drought, and subject to the same atmospheric conditions, do not suffer, though their geological conditions are identical, and places with very different atmospheric and geological conditions do suffer if there is personal communication between them and an affected place.

There was an epidemic at Pakhoi in the present year.

There was a prolonged absence of rain at Pakhoi, Canton, and Hong Kong simultaneously.

The plague made its appearance first at Pakhoi, then at Canton and its vicinity, then at Hong Kong, and then in the dependencies of Hong Kong in the order given.

Persons trade between Pakhoi and Canton, between Canton and Hong Kong, and between Hong Kong and its dependencies.

The first cases occurring in Hong Kong were traced to Canton without exception.

The first cases occurring in the dependencies of Hong Kong were traced to Hong Kong without exception.

These facts prove that the disease is not atmospheric, that it is not telluric, and that it can be conveyed by persons and be communicated to those with whom they have intercourse.

3. At the commencement of the epidemic, and as it spread, the cases were almost without exception fatal. As the number of cases lessened the symptoms became much modified; death occurred later in fatal cases, and the proportion of deaths to cases was not nearly so large as at first.

This shows a decreasing virulence of the poison.

Professor Kitasato and his colleagues and Dr. Yessin discovered an organism in 25 out of 30 cases in the blood examined, and in all cases in the spleen and buboes of those affected by plague. This organism was a bacillus, the inoculation of a pure cultivation of which was fatal to all animals inoculated, the symptoms and pathological appearances being identical with those of the persons affected; these bacilli multiplied, and were discovered in the blood, spleen, and solid organs of the animals experimented upon.

In those cases where a history was obtained the origin of the attack was generally traced to intercourse with affected persons, or visits to, or sojourns in, their dwellings.

#### HISTORY OF PRESENT EPIDEMIC.

The dry season of this year was a very long one and water ran low everywhere (it was only turned on for two hours in the 24 in Victoria).

In the month of April no rain had fallen, and the plague broke out in Canton. There was an epizootic at the same time among the rats and pigs.

In May Dr. Lowson, of the Government Civil Hospital, visited Canton to ascertain the nature of the outbreak, about which conflicting rumours were in circulation here. He saw cases of plague and corpses. On his return here there were found to be about 90 cases of plague at the Tung Wa Hospital, and some lying dead from the disease—the epidemic was practically confined to the Chinese throughout—and it was ascertained that several people had died about 10 days previously in a house in Bonham Strand in a rapid way; but this fact had escaped observation owing to the unsatisfactory mode of registration of deaths in the town. These were doubtless cases of plague. Most of the victims were commercial travellers who had returned from Canton recently. There is continual intercourse between Hong Kong and Canton, and several hundred coolies travel daily between the two cities, so that any epidemic existing in one place of an infectious or contagious nature is bound to appear before long in the other. It was now therefore evident that the plague had made its appearance here, and all the cases found in the Tung Wa Hospital were traced to the district of Tai-ping-shan, the oldest and worst part of Chinatown. It commenced at the head of Market Street and extended down it gradually, and into lanes leading from it, and later on was pretty evenly

distributed through this locality. Its further progress will be described later.

Such measures as could be taken were now resorted to by the authorities. The sick were removed to the civil hospital ship "Hygeia," which was towed near the locality infected by the plague, and a police station at the far end of West Point was placed at the disposal of the Civil Hospital to be used as a hospital. It will be hereafter alluded to as the Kennedytown Hospital. The medical staff was increased to four, Drs. Lowson, senior and junior, Surgeon Penny, R.N., and myself, and the nursing staff of the Government Civil Hospital volunteered their aid. Water transport was provided from the wharf to the "Hygeia" and Kennedytown Hospital. Dr. Lowson and Surgeon Penny worked at these establishments, Dr. Lowson, junior, was at the ordinary work of the Civil Hospital, and I was placed in charge of the Tung Wa hospital to diagnose and pass on the sick and dead from plague for treatment or burial. There was estimated accommodation in the two plague hospitals for about 120 persons.

Soldiers and sailors were called upon to volunteer, the former in assisting the search parties, the latter for managing the water transport.

His Excellency General Barker, in the absence of the Governor in Council, made byelaws to legalise the searching of houses of the Chinese for cases of plague, and for the application of such means as might tend to check its progress. The Sanitary Board formed a Permanent Sanitary Committee to administer the operations, meeting daily. Searching parties were formed of volunteers, police, inspectors of nuisances, and soldiers, and all sick or dead were sent to the Tung Wa Hospital for my inspection, and if plague cases, to the hospital or cemetery. A piece of land just beyond the Kennedytown Hospital was given as a plague cemetery, and coffins were ordered in considerable quantities. There was at the time no quicklime in the colony, so that the first bodies were not treated with it, but on its arrival from Canton all bodies were covered with it previous to interment. The site of the cemetery was not well chosen, as it was small (only to hold 200), and on a steep crumbling declivity, but it has been since secured by a retaining wall. At first there were many difficulties in contending with the plague, from lack of materials, and opposition both from Chinese and the merchants, who feared the spoiling of their trade by the interference with the household arrangements of the Chinese, who threatened to quit the colony or cause a coolie strike if the search parties were not stopped. Malicious rumours were also put into circulation describing most frightful barbarities practised by the European doctors upon the Chinese sick, and several meetings of the people were held to protest against the sick being compulsorily sent to hospital and against the search parties and the coffining of the dead with quick lime. These agitations were followed by stone throwing and assaults upon police and searchers, and had to be met by a show of some small force. It was now asked that the Tung Wa Hospital might start a branch for the plague patients under Chinese doctors and methods, and this was granted, with the proviso that it should be under European supervision. Accordingly, an old factory was adapted for that purpose, close to the Kennedytown Hospital, and equipped by the Chinese after their own fashion for the reception of patients. At this time the original cemetery was nearly full and a new piece of ground had to be selected on the S.W. side of the island, accessible by launch.

The "Hygeia" was quite full, and the lower deck, which has somewhat restricted means of ventilation, had to be emptied of its patients as being unsuitable for their treatment.

The number of patients increased day by day, and the mortality rate was excessive, about 90 per cent. of those attacked dying.

It became a question of the greatest moment how to deal with the houses and effects of those affected. At first the sick were in small and manageable numbers, and their houses were disinfected with sulphur, and cleansed and limewashed by the ordinary municipal sanitary staff. But as the numbers increased it was found impossible not only to deal with them promptly, but to provide accommodation for the occupants until the houses could be re-opened to them. A fatigue party of 200 of the Shropshire Light Infantry with their officers were requested and volunteered to assist in the work.



Numerous recommendations had been made by the medical staff collectively and individually to the Sanitary Committee to (1) close all houses in which the plague had occurred; (2) to form a temporary town of matcheds or junks into which the former occupants of the infected houses might be sent, and where they would be under observation, and their movements be restricted by a cordon or patrols; (3) that every house in the town should be searched daily, the town being divided into districts and sub-districts for the purpose; (4) that the Tung Wa hospital should no longer be used as a receiving place for plague patients, as, owing to the instigation of certain members of its committee (Chinese), every art was being practised there to smuggle corpses and patients away without their being detected.

*Note.*—The Tung Wa hospital is a purely Chinese institution, which is, however, nominally under supervision of the colonial surgeon. It was sanctioned by a former Government of Hong Kong. The object of it was to provide a place where all the poor Chinese might come either to die and receive gratuitous burial according to Chinese rites, or to be treated, or treat themselves, as the case may be. The Chinese do not like their relatives to die in their beds or houses, and they used, previously to the Tung Wa being built, to put them in temples when they were moribund and in other places, and the bodies of those whose friends were too poor to afford a proper funeral were laid out in the streets or elsewhere somewhat to the public inconvenience. The Tung Wa from this point of view is advantageous, but in our understanding of the word hospital it is an absolute disgrace. The doctors, so-called, are Chinese, and they have no knowledge of sanitation or treatment of disease. The consequence is that although the building is a good one, and might be made into a good hospital, it is now kept dirty, and the personal cleanliness of the patients and their feeding and nursing and treatment are matters of no attention or concern. If they are not well enough to feed themselves they do not get fed unless their friends do it, and *a helpless patient with a fractured spine has lain in his excreta for five weeks.* The wards are subdivided by wooden partitions into cubicles with two beds apiece, and each cubicle has its pail into which the patient's urinate and defæcate. Opium smoking is allowed freely. The women are in separate wards from the men, but there the organisation seems to end. If a patient is delirious and restless he may fall out of bed on to the floor, the bed is then removed; if more violent, his hands and feet are tied with cords. The lunatics have a division of their own arranged like a menagerie. It is a large apartment with a central passage and cages with sloping floors and wooden bars on each side, the floors draining into the channels. They are fed, and no more attention is given to them. This description is enough to show that the Tung Wa hospital is not an altogether admirable institution, and when it is added that 26 plague patients were scattered about among the wards on the 12th May dying or desperately ill, and that the Tung Wa Chinese staff did all in their power to conceal the patients, it will be seen that our recommendation was amply justified.

But this recommendation, with others, were considered impracticable, and the searching from house to house was the only one carried out thoroughly.

The whole of the Chinese town has been allowed to fall into a condition of insanitation which is perfectly astounding; every sanitary law was offended against. The drainage, which is not completed, was further impeded by the want of water, which, at this time (May 13th), was barely sufficient for personal use, and one of the main sewers from the infected district was choked at its mouth and full, for a distance of 120 yards, of sewage. The house-drainage, generally speaking, was of an obsolete pattern, the drains often broke, and leading to the old granite storm-water drains. If of the recent pattern, in some cases the traps had been broken by the occupants of the dwellings, and the drains used as receptacles for solid refuse, boots and shoes, rags, vegetable parings, &c.

The back kitchens were used generally as urinals, and these conditions ensured the ground being soaked in many places with organic decomposing matter.

The drainage of the town of Victoria is still awaiting completion, and will be alluded to later.

The houses are many of them old, and built back to back, and access to them is often by means of a very narrow lane, sometimes not exceeding 3 feet in width.

The ventilation of houses is bad, that of departments worse. There is little or no light in the lower storey, and ventilation and light are still further obstructed by the erection of cubicles and cocklofts, sub-dividing the rooms; these in their turn are overcrowded.

The ground-storey floors are damp, and many families live in basements. The floors are of mud or porous tiles.

The water supply is supposed to be from Tytam or Pokfulum reservoir, and is laid on. If it only were used there would be no ground to complain of the water, but there are very many wells of slight depth, receiving surface and subsoil water, and these are situated in dirty lanes or even in houses, and are quite unprotected from contamination. Finally, the food consumed by the Chinese is of a very poor quality, consisting of boiled rice, fish, tea and vegetables.

Under these conditions it is not remarkable that an epidemic should have taken such a hold as it did.

There was an attempt made to flush the sewers with sea water, as they were obviously in need of flushing (and certainly there should be some means of carrying this out periodically during the dry season). This attempt was not too successful.

As cases continued to multiply it was next decided to consider as infected houses all those in which three cases of plague occurred, and to close them, and merely to cleanse and disinfect such houses as had had one or two cases only. The area from which the cases came was now extended, as might have been expected, and cases cropped up at the Peak, Wanchai, Queen's Gardens, and elsewhere; all, however, being traced to some intercourse or contact with the sick or their habitations.

The stopping of coolie immigration from Canton was proposed, but was negatived by the Executive Council on the ground that all our supplies are received from Canton, and if the steamers refused to take coolies they would be probably attacked, and the supplies cut off.

Every radical measure proposed by the medical staff was considered too drastic, and there was a notion that as soon as the rains came the plague would be at an end; in fact, in spite of every warning the public refused to believe in the serious nature of the epidemic, and the measures assented to and taken were all half-measures.

The next affected places were coast villages on the Kowloon Peninsula, *e.g.*, Kowloon City, Yaumati, Hong Hom, and Tai-kok-tsui. All these had almost hourly intercourse with Hong Kong, and the earlier cases in them were without exception traced to the town of Victoria. A few cases occurred in Shankiwau and another village, but these villages imposed a quarantine of their own accord, and have since been exempt. At the first-mentioned places, however, there is a large boat population, and the intercourse is so free as to be beyond control of the inhabitants, so that the disease became indigenous there.

Some of the soldiers employed on the working parties became affected, and some who were not so employed, and an officer, Captain Vesey, of the Shropshire Regiment, was taken ill early in June of plague and succumbed. He had been working hard with his men in the infected houses, and doubtless contracted the disease there. About four other Europeans have since contracted the disease. They have all been treated on the "Hygeia" with a markedly smaller mortality than is the case among the Chinese.

The Alice Memorial Hospital now took over a matshed at Kennedytown, and it was converted into a hospital for 50 plague patients. It was under Government supervision and two European missionary doctors, and certain Chinese medical students, formed its staff. The Viceroy at Canton had requested that patients suffering from plague in Hong Kong might be permitted to come to Canton for treatment, and this point was also yielded by the Hong Kong Government with the stipulation that: (a) the patients should be considered medically fit for the journey; (b) they should come through the established hospitals; (c) that the means of conveyance should be suitable, and that the

Viceroy would make proper arrangements for their reception. This was acceded to, and the patients who were willing to go, or desirous of going, were put on board the junks and towed to Canton.

The houses in which cases of plague had occurred were now disinfected by chlorine gas obtained by acting on chloriated lime with dilute sulphuric acid, and this disinfection was carried out, under supervision of the Government analyst, by the soldiers. The burying party and their operations were supervised by Captain Hastings, and, as the Chinese were not trustworthy, and took advantage of the flight of coolies from Hong Kong to demand exorbitant wages, six Europeans from the Sailors' Home volunteered and carried out the burials. The corpses were removed from the Tung Wa in a waggon which carried from six to ten at one time. All were coffined in lime, and their mats, &c. were burned. By this time the organisation was fairly complete, and the disinfecting parties were able to disinfect every house on the same day as a case occurred. The amount of rubbish found in a Chinese house is very great. All that was not good or useful to the Chinese, and that was likely to contain plague germs, was burned on the spot, if the street was wide enough, and if not, taken to some waste ground and burned in a furnace.

Empty houses were rented by the Permanent Committee, and such people as could not afford, or did not wish to leave the colony, whose houses had been shut, were put into them. The great majority of the cases came from the district of Taiping-Shan, and out of about 20 blocks of houses, until a period was reached at which only a few of these houses were open, the remainder having yielded three cases of plague and being closed for that reason. It was decided then to examine and close all such houses in this district as were objectionable on sanitary grounds, and the result was that they were all closed, and the streets were built up and the inhabitants removed to other houses. This proved a most salutary measure, for out of about 600 families removed only nine cases of plague have since been found, those admitted within eight days (the period of incubation) having been excepted.

It was proposed, and this is now being considered, to reserve this and other insanitary portions of the town under the Crown Lands Resumption Ordinance, and to demolish the houses upon it and lay it out afresh. This is a most excellent measure, I think, because there is no possibility of correcting the bad arrangement of the place without demolishing the houses, and, moreover, the bacillus of plague has been found in numbers sufficient to produce very large and active cultivations at a depth of 1 foot in the soil of one of the plague-infected houses.

The number of deaths per diem rose about the middle of June to 107 in one day, the cases came in very fast and were very severe. Many people fell dead in the streets, and the Chinese left for Canton and the country in large numbers. The epidemic also became severe in Kowloon City and Sam Sui Po on the mainland, to which places some people had fled from Victoria, and it was rumoured that a hospital had been started on the mainland at Lai Chi Kok to receive patients from Kowloon and its neighbourhood by order of the Military Commandant at Kowloon City, and with the sanction of the Viceroy of Canton.

In company with the Captain Superintendent of Police in Victoria I proceeded thither in a launch and found that the report was correct, and that an old Yamen had been partially equipped as a plague hospital, after the Chinese fashion, and was superintended by a Chinese doctor from Canton, assisted by others. There were 45 plague patients there, and some 10 corpses in a temporary mortuary awaiting burial. The site was a good one, as it was well isolated, and on the harbour shore, but there were no disinfectants and there was no proper drainage. An additional matshed was in course of erection, and the establishment when complete could accommodate 80 patients. The treatment carried out there was of a somewhat sketchy kind, as is usual among the Chinese. The root of a lily is one of the chief drugs used in this complaint, as a decoction, and musk is given. There is no comfort, and the patients lie in the clothes in which they came. Their friends are allowed to come and see them, and the yard was full of visitors. We next visited the cemetery, which is about  $\frac{1}{2}$ -mile off. There were 35 graves (it had been started three days

before we saw it), and 10 corpses awaiting burial. The graves were 14 inches deep on an average, and the lid of the coffin was 4 inches below the surface level. Earth was heaped up to a height of 10 inches. The site of the cemetery was fairly chosen, but objectionable on one account, viz., that it was on the slope of a hill draining into a valley, with a stream which passed through a small group of houses forming the village of Cheung Shawan, and placing this village in great danger. The inhabitants do not drink the water of the stream, but they use it for making rice-cakes and irrigating their paddy fields, and the pigs drink from it. This place being on the mainland of China is not under control of the Colonial authorities, and is sufficiently near to Hong Kong to be a source of danger in the future, more especially if the disease should break out in Cheung Shawan, but as a receiving house for the sick from Chinese Kowloon and the neighbourhood the hospital itself is very convenient.

The village of Cheung Shawan will have to be carefully watched for a year at least, and the water of the stream running through it periodically examined for organic matter and plague bacilli. Since this time (25th June) the statistics of the hospital have been examined daily, and I have paid a second and third visit to the cemetery, and found 258 graves of the same average depth as mentioned, viz., 14 inches. The Colonial authorities now began to interest themselves in the establishment at Lai Chi Kok after the medical staff had sent very strong representations as to the state of the place, and against allowing patients to go to it from Hong Kong as proposed.

The Chinese have a great antipathy to our method of burying infectious corpses in quick lime, and to avoid it they smuggle away their dead.

These are generally exhumed after a variable period, and their bones conveyed to the abodes of their families, where they are deposited in earthen vessels.

Now as the life of a plague bacillus is unknown, it may be stated, that as far we know, it is possible that plague germs might be conveyed to various places in the future by the bones from Lai Chi Kok and Sam-Sui-Po, where upwards of 20 plague corpses lie buried four inches from the surface of the ground 150 yards from dwelling-houses. At all events, the near neighbourhood of these corpses, insufficiently buried and not disinfected, is enough to justify an apprehension with regard to the future.

Towards the end of June more medical assistance was forthcoming.

Hitherto only four medical men had been doing executive work. These were now augmented by the arrival of three civilian doctors and two naval surgeons—Drs. Baillie, Wittenberg, and Molyneux, and Surgeons Meadon and Beasblock, R.N.

The three former were attached to the various plague hospitals, and the latter were employed in inspecting the crews and passengers of junks from Canton.

The daily steamers from Canton and Macao were inspected by the medical officer of health for the port.

All sick and people desirous of leaving this town for Canton were allowed to do so, and many deaths occurred on board the steamers.

At Macao the most stringent means were adopted to exclude infected persons and preserve the sanitary condition of the town, with the result that there was no plague epidemic there, only 50 deaths of refugees having occurred there.

During the months of June the poor Chinese have been leaving Hong Kong in great numbers for Canton and the country, and it is estimated that out of the population of 220,000 about 60,000 had left.

Among these were many who were sickening for the plague, and no doubt they contributed to swell the numbers of deaths from plague in Canton by overcrowding the city.

It became usual to find that if a case of plague occurred in a house all the inhabitants of that and sometimes the adjacent houses would have left within a few hours.

Many corpses were put out into the street and concealed in outhouses by the other inhabitants in order to avoid the white washing and cleansing which inevitably followed the discovery of a case in a house.

*In one case a corpse was found in a bale of dried fish consigned to Swatow, where on arrival in an advanced state of decomposition the bale was opened and the cause brought to light.*

The coffin guilds in Canton had supplied 42,000 coffins during the months of April, May, and June. The deaths of children are excluded from the number of those coffins as they are buried in cloths or baskets, and deaths occurred in the country which do not appear. There are no statistics kept of deaths in this city (Canton), and the coffin makers are the only people from whom information can be gathered by the number of coffins they sell. In Hong Kong also a number of deaths occurred from plague which were not registered as such, or of which the bodies were surreptitiously removed to other places.

The population of Victoria was temporarily much reduced, which was a circumstance advantageous to grappling with the disease inasmuch as there was less overcrowding, and the more objectionable dwellings could be emptied of their inhabitants. It became my duty then to visit and condemn all dwellings which were unfit for human habitation, and of these there were many hundreds. This work is at the time of writing nearly finished, and ordinances are being framed to correct the worst features in them. The conditions of these dwellings or types of them will be described later.

The disinfection and cleansing of infected houses was carried on everywhere in British territory, and the hospital accommodation was added to and modified by the occupation of some new buildings known as the cattle depôt at Kennedy-town, and later the closure of the glass works, which had become very bad under Chinese management. Two of the Japanese doctors who had come to study the pathology, clinical characters, and bacteriology of the plague became affected, one, Dr. Aoyama, by accidental inoculation during a post-mortem examination, and another by untraceable means. They both recovered.

The number of admissions and deaths fell gradually after the middle of June, but the precautions as to house-to-house visitations, disinfection of houses, &c., have been rigidly continued up to the present time, and the placing of moistened chlorinated lime in all houses has been tried as an experiment.

The outlying towns of Youmati and Hong Hom, where there was a good deal of plague, were cleaned, and all houses in the British possessions, where cases of plague had occurred, were disinfected.

The number of cases continued gradually to diminish, and the population to return, and though the people have much increased in numbers, and have been coming back 1,900 at a time, there has been a smaller proportion of admissions and deaths to population than before, and a gradually decreasing number up to now. It is noticeable, however, after rain, that the admissions increase somewhat. This may be due to the people sleeping indoors and closing their windows, as the increase is not perceptible until a few days after commencement of rain.

On August the 14th the cattle depôt hospital was closed, and Lai-chi-Kok on the 18th, the patients remaining in the former being sent to Kennedy-town, and those from the latter to Canton. More active measures are to be undertaken for the rectification of the insanitary condition of the town, but so gross has this state of things been allowed to become that it will be impossible to get the place into a thoroughly good state in 12 months.

The things to be undertaken are:—

- I. The evacuation of all basements as dwelling-houses.
- II. The redraining of such houses as are defective in that respect (this will take more time).
- III. The increase of water supply, which is promised to be complete by May 1895.
- IV. The laying down of imperishable and non-absorbent floors in all basements and ground floors.
- V. The inspection and closing of wells which are not protected.
- VI. The removal of all mezzanine floors, which are contrary to regulations (this is already being done).
- VII. The registration of coolie-houses, an order to bring them under frequent inspection.

These measures are to effect improvement in water supply and drainage, the prevention of overcrowding, and the improved sanitation of the dwellings.

But the construction of houses is bad in many cases and must be also equally attended to. The mortality during the epidemic in Hong Kong has been upwards of 3,000, in Canton 150,000, according to estimates.

I paid a visit to Canton to see the quarter in which the plague started, and the hospitals and cemeteries.

At the time of the visit (23rd August) there were 100 cases in hospital, and about three admissions daily.

The hospital (Wong Sha) visited is a temporary building of bamboo and mats, and thin planking. It is erected over water on bamboo piles, and is capable of holding 1,400 patients. The excreta drop into the water through holes in the floor of each cubicle, and probably remain there, as there is no stream to speak of. The dead are either buried outside the city wall on the north, or at Honam in some waste ground east of the city.

The houses are mostly of one storey, back to back, with earth or tiled floors.

There is no drainage proper, but everything finds its way into the streets where there are channels either under the flags in the centre or at the side, and uncovered.

Few streets are more than 12 feet wide, and the population is very large.

It is difficult to understand how the plague stopped in Canton, as all the arrangements seem to favour its spread and continuance. It is not possible to compare the epidemic in Canton with that here in judging of the value of the efforts made to combat it, as the records in Canton are not certain, and the number of deaths probably largely exceeds the computation of 160,000. Here, also, the exact number of deaths has not been recorded, but probably is about 4,000. The population of Canton is 1,800,000; the population of Hong Kong is 220,000. The epidemic lasted in Canton for six months; in Hong Kong for four months. The decline in both places of the epidemic has been simultaneous, and may fairly be attributed to the change in meteorological conditions, and the exhaustion of the virulency of the bacilli. But it is hoped that by this time next year the sanitary condition of Hong Kong may be so much improved as to make it possible to forestall and cut short any outbreak, whereas in Canton the conditions of life are in no way altered, and there is no reason to believe that another outbreak will not occur next year.

*Note.*—The outbreak of “emerods” among the men of Ashdod, as mentioned in the First Book of Samuel, was bubonic plague in all probability. The people died in large numbers, and were smitten with emerods in their secret parts. Now no large number of persons ever died of hæmorrhoids; these emerods were inguinal or femoral buboes. The ark was taken by the Philistines from Ashdod to Bethshemesh; the sickness broke out there and large numbers died; it was contagious. Images of emerods and mice “which marred the land,” were made of gold and put into the ark. There was a connexion in the minds of these people between mice and the plague.

The ancient Egyptians and Greeks always connected the plague with mice. During, or previous to outbreaks of the plague there is generally an epizootic among domestic animals, such as rats, mice, and pigs.

This occurred in Hong Kong subsequently to the occurrence of the disease among human beings, and plague bacilli were found in the bodies of rats and mice so dying.

They come out of their holes and behave in an eccentric manner just before dying.

There was an epizootic among pigs in certain Chinese villages, and in one village near Kowloon pigs and dogs were found eating a plague-corpsé. It is probable that the pigs may contract the disease by eating corpses and excreta. The point is, that an epizootic should never be disregarded when plague is in the neighbourhood.

For the following tables of mortality and other statistics I am indebted to Mr. Ram, the acting secretary, Sanitary Board :—

## STATISTICS OF THE PLAGUE.

MAY, 1894.																																Grand Total.
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.	31.		
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	46	33	12	13	3	12	20	5	5	1	-	-	-	-	-	-	-	1	2	155	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	14	6	17	11	8	2	-	-	2	1	1	1	1	1	-	4	71	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	39	26	18	18	20	20	12	32	30	32	35	232	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	46	33	16	27	9	29	31	13	46	27	18	18	22	21	13	32	31	33	41	508	
-	-	-	-	-	-	-	-	-	-	12	10	3	-	-	-	3	-	-	-	2	1	-	-	-	-	-	-	-	-	-	31	
-	-	-	-	-	-	-	-	-	-	-	-	12	23	12	9	2	7	13	8	3	3	2	1	-	1	-	-	-	-	-	101	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	12	9	9	14	7	3	4	1	-	2	1	1	1	-	-	1	69	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	10	15	14	19	17	30	14	19	17	25	192	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	1	16	10	9	10	3	6	9	7	7	10	9	5	4	-	1	10	11	14	11	22	175	
-	-	-	-	-	-	-	-	-	-	13	26	25	32	27	34	20	35	34	32	45	27	23	19	21	30	30	36	33	38	45	568	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

## Statistics of the Plague—continued.

		MAY, 1894—continued.																												Grand Total.				
		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.	31.		
Discharged from Hospitals.	Tung Wa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Hygeia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	
	Kennedy Town	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	
	Glassworks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	
	Cattle Depot	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Sheep pens	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total discharges		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	3	2	1	-	3	2	3	2	1	22	
Remainder in Hospitals.	Tung Wa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Hygeia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Kennedy Town	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Glassworks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Cattle Depot	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Sheep pens	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total remaining under treatment		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	



Statistics of the Plague—continued.

		JUNE, 1894.																														Grand Total.	
		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.		
Admissions to Hospitals.	Tung Wa -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Hygeia -	-	3	1	1	-	-	-	-	-	2	2	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	2	15	
	Kennedy Town -	-	2	4	3	4	3	3	2	2	6	1	11	8	2	6	7	1	-	3	3	6	8	4	6	8	4	2	4	-	3	120	
	Glassworks -	-	54	44	77	69	78	83	66	61	79	68	63	58	47	42	52	57	35	27	-	-	-	-	-	-	-	-	-	-	-	1,000	
	Cattle Depot -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Sheep pens -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Matched (Alice Memo- rial).	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42	25	10	15	9	7	5	8	2	2	8	8	141
Total Admissions -		59	48	81	74	82	86	69	63	81	76	66	69	55	44	59	64	36	27	56	29	24	31	20	24	22	17	8	6	11	16	1,405	
Deaths in Hospitals and elsewhere.	Tung Wa -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Hygeia -	-	1	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	
	Kennedy Town -	-	1	1	3	1	3	2	1	2	2	6	1	1	5	6	3	2	4	2	3	3	1	2	4	5	4	6	3	3	2	4	86
	Glassworks -	-	31	34	51	54	61	55	71	58	56	55	49	56	51	50	25	24	17	20	-	-	-	-	-	-	-	-	-	-	-	818	
	Cattle Depot -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Sheep pens -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Elsewhere -	-	21	41	18	37	27	26	35	51	16	28	43	29	26	28	23	18	18	10	15	8	10	11	13	11	10	10	-	6	4	4	579
Matched (Alice Memo- rial).		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	6	4	5	5	7	10	9	4	2	6	2	4	64
Total Deaths -		54	70	72	92	93	83	107	91	76	89	93	86	82	84	51	44	39	32	46	43	39	34	35	39	29	25	13	18	11	20	1,686	

## Statistics of the Plague—continued.

JUNE, 1894—continued.																																Grand Total
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.			
Discharged from Hospitals.																																
Tung Wa .	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Hygiea .	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	3		
Kennedy Town .	-	4	1	3	-	1	2	1	1	1	1	4	-	-	-	-	-	-	2	3	1	-	-	-	-	-	-	-	-	3		
Glasgow .	-	1	3	-	-	-	1	1	-	-	-	-	-	2	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	9		
Cattle Depot .	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Sheep pens .	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	-	2	-	-	-	-	-	-	10		
Matched (Alice Memorial).	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1		
Total Discharges .	-	5	3	2	-	-	2	3	1	2	-	1	1	4	2	-	2	-	-	2	9	5	1	2	-	-	-	-	3	50		
Remaining under treatment in Hospitals.																																
Tung Wa .	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Hygiea .	-	6	7	8	6	6	5	5	7	9	9	9	9	10	10	10	10	10	10	8	8	8	8	8	8	9	9	9	11	-		
Kennedy Town .	-	30	28	29	30	32	33	31	30	29	38	40	33	36	41	38	36	36	34	36	41	42	46	44	43	44	42	38	-	-		
Glasgow .	-	104	113	137	133	169	197	192	194	217	229	245	245	98	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Cattle Depot .	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Sheep pens .	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	94	91	89	81	77	80	74	73	78	-	-		
Matched (Alice Memorial).	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	15	19	23	22	23	23	24	20	21	20	-		
Total remaining under Treatment .	140	143	172	139	203	333	330	250	253	263	281	292	290	144	-	-	-	-	-	157	163	161	153	154	155	150	146	150	147	-		

Statistics of the Plague—continued.

		JULY, 1894.																															Grand Total
		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.	31.	
Admissions to Hospitals.	Tung Wa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Hygeia	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
	Kennedy Town	-	1	1	-	2	-	1	1	1	1	-	-	-	1	3	1	2	1	-	-	2	-	1	1	-	2	-	-	2	-	-	25
	Cattle Depot	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Sheep pens	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Matched (Alice Memorial).	16	9	8	10	10	8	7	4	8	6	7	6	2	3	2	6	8	6	4	6	2	-	2	2	4	1	-	3	-	-	-	145
	Government Civil Hospital.	3	3	3	1	2	-	4	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18
Total admissions	20	14	13	12	14	3	13	5	9	7	8	7	3	5	5	7	10	7	4	6	4	-	3	3	4	3	-	-	3	2	-	-	193
Deaths in Hospitals and elsewhere.	Tung Wa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Hygeia	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
	Kennedy Town	-	1	2	-	1	-	1	1	1	1	1	1	12	-	2	1	1	1	1	-	-	1	-	1	-	1	-	1	3	-	-	23
	Cattle Depot	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Sheep pens	-	4	8	5	12	6	4	3	2	4	2	6	5	4	-	3	1	5	2	1	3	1	3	1	1	1	4	-	-	1	1	100
	Elsewhere	-	9	8	4	5	4	7	3	4	5	2	4	2	-	1	2	-	4	3	1	1	-	2	2	3	-	2	4	1	-	-	87
	Matched (Alice Memorial).	3	1	2	3	2	1	1	-	1	2	-	1	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19
Government Civil Hospital.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	
Total deaths	17	18	16	15	19	14	9	7	9	9	6	12	10	5	4	6	2	10	5	2	4	2	5	4	4	4	1	2	5	1	-	-	233

## Statistics of the Plague—continued.

JULY, 1894—continued.

JULY, 1894--continued.

Grand Total.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.	31.		
Discharged from Hospitals.	Tung Wa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Hygia	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	9	-	-	7	-	-	-	-	-	
	Kennedy Town	-	-	-	-	-	1	-	7	1	1	-	-	-	-	-	-	-	-	-	-	4	-	-	-	1	1	2	2	-	3	23	
	Cattle Depot	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Sheep pens	-	-	-	-	-	-	-	-	-	-	-	-	10	-	8	-	-	-	-	-	2	7	-	-	-	-	-	-	1	23		
	Matched (Alice Memorial). Government Civil Hospital.	-	-	-	-	-	-	-	-	-	-	2	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	
Total discharges	-	-	2	-	-	-	1	-	7	-	1	2	1	10	-	4	-	-	-	-	-	6	7	-	1	1	9	2	-	4	58		
Remaining under treatment in Hospitals.	Tung Wa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Hygia	-	11	12	10	9	9	9	9	9	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	3	
	Kennedy Town	-	33	33	37	38	38	37	38	31	31	30	29	26	27	28	28	27	27	27	29	27	38	38	38	39	37	35	35	31	28	-	
	Cattle Depot	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Sheep pens	-	90	91	91	94	91	94	95	101	103	108	108	105	94	96	96	103	48	50	54	52	49	41	43	44	41	38	38	41	40	38	-
	Matched (Alice Memorial). Government Civil Hospital.	-	20	20	21	19	19	18	21	21	20	18	16	16	16	15	14	14	14	14	14	14	-	-	-	-	-	-	-	-	-	-	-
Total remaining under treatment	159	161	159	161	160	166	161	163	161	161	166	163	157	147	149	148	154	99	101	106	105	96	89	90	92	90	85	76	76	74	69	-	

## PART II.

## DESCRIPTION OF THE DISEASE.

**SYMPTOMS.**—*Fever*, ushered in by chills, occasionally running to 104° or above it. *Constipation* the rule, but *diarrhœa* occasional, giving place to former. *Vomiting* not uncommon. *Headache* often severe and referred to various regions, temporal more especially. *Tongue* furred—at first white, then yellow, then brown to black, and very dry. *Sordes* on teeth. Pain in the region of a group of *lymphatic glands*, generally femoral, inguinal, cervical, or axillary, occasionally mesenteric or bronchial, in the order of frequency above, and generally confined to one group. The cervical glands are most commonly affected in children in my experience. The pain is acute, and of a stabbing character, and the region is very intensely tender. The site is determined in some instances by a wound or scratch; but this is, of course, often wanting. The gland or group next becomes enlarged (the affection of the glands may precede, accompany, or follow, in one case by as much as six days, the onset of the fever), and great local infiltration takes place. *Cerebral symptoms* are generally marked, and in fatal cases very severe; delirium, convulsions, and coma following one another in quick succession. Sleeplessness is a frequent and very exhausting symptom. I have seen *hæmorrhages* from nose, stomach, vagina, and bowel, and in a very few cases subcutaneous extravasations and petechiæ. The *pulse* is at first rapid, and in a severe case soon becomes running, and the heart fails very suddenly, often giving rise to a fatal syncope. The patient may be walking in the street and suddenly reel and fall, and be found to be dead.

The *blood* is rapidly deprived of hæmoglobin, and after a few days becomes thick and tarry. After death it is liquid. There is sometimes *staining* of the skin and *conjunctivæ*, as in jaundice. The *spleen* is always somewhat enlarged, the *liver* sometimes. *Urine* contains albumen in some cases. There is involuntary micturition in cases of comatose or semi-comatose people, occasionally retention. The *appearance* of a plague-stricken person is suggestive. In some cases the face is anxious, in the majority, apathetic, the eyes fixed and staring, saliva dribbling from the mouth, and often incontinence of urine. The skin is dusky or yellowish, and the patient may be rather wildly delirious or with clonic spasms, or comatose. A cursory glance at a patient with the more common apathetic countenance is somewhat deceptive, as he may look as if nothing were the matter, and yet die a moment later. Latterly in this epidemic there have been cases in which the bubo does not exist, but which have been proved to be cases of plague both by the finding of Kitasato's plague bacillus and by the high rate of mortality.

*Complications* are pericarditis and myocarditis, congestion of lungs, and abscesses other than glandular, some cases of hypopion have been seen.

**COURSE.**—The temperature rises somewhat suddenly and is unaffected by quinine or other antipyretics. The tendency to hyperpyrexia is not very great.

The bubo, if any, may have commenced before the fever, or may be coincident with, or follow it. The appetite is lost, and there is much thirst, diarrhœa or vomiting may appear, the diarrhœa generally ceasing shortly and being succeeded by obstinate constipation. On the second day the symptoms are well established and the patient is probably delirious. It is not uncommon for death to occur at this time. In some cases it has happened within 12 hours of seizure, but these are not common, and it is difficult to get a correct history from the relatives. But I have a personal knowledge of one case, that of a chair coolie, who was to all appearance quite well, and at his occupation till 4.30 p.m., felt ill at 5 and lay down, was sent to hospital with a well-marked bubo and high fever on the next morning at 9 a.m., and was dead at 10 a.m. on the third day. The temperature remains high for a variable period, unaffected by quinine and antipyretics and falls gradually on about the sixth

day. Delirium may be very violent, and give place to convulsions and coma, but in the cases of apparently sudden death the patient is quite sensible throughout to all appearance and in many of these cases it has been impossible to detect any bubo after death. (The opportunities of post-mortem examination are few, and it is unknown whether some of the visceral lymphatic glands have been the seat of affection in such cases.) The pulse often begins to fail after two or three days, and the blood loses its hæmoglobin very quickly. When once the bubo has commenced it swells up very rapidly, but the amount of peripheral effusion and the tenderness of the part prevent an accurate estimate of the size of the gland or glands. It appears to be as large as a hen's egg in some instances. If incised at this time there is found to be a bloody extravasation in and around it, and much serous infiltration in the tissues about. The pain and tenderness gradually subside as the case goes on.

Buboes suppurate in about 78 per cent. of cases if they survive.

About the fourth or fifth day the patient is at his worst, and the symptoms are most intense. The tongue is dry and black, the pulse running, the headache or other cerebral symptoms intense, the hæmoglobin down perhaps to 35 per cent. Semi-consciousness, or convulsions, or coma; the temperature  $101^{\circ}$  to  $105^{\circ}$ , and death most frequently happens on the 6th day. There may have been hæmatemesis or epistaxis or hæmorrhages from other cavities, and the skin may show petechiæ or extravasations. There may be hypostatic congestion of the lungs and dyspnoea. If recovery is to take place the temperature gradually subsides, and the bubo may suppurate. Favourable signs are: moderate fever, maintenance of pulse, mild cerebral symptoms, absence of complications, and tiding over the 10th day; gradual return of appetite, and perhaps suppuration of bubo, but this is a matter generally of lapse of time. When opened it is very slow of healing, and the glands are often caseous; the discharge is bloody at first, and thin and ichorous later on.

There has been no time to know what sequelæ may occur, but strength returns very slowly, and the patient has to be kept isolated for a month at least from date of attack, as the blood contains bacilli for three weeks in almost all cases.

**TREATMENT.**—This is adapted to combat symptoms. In the beginning a calomel purge, and if fever is high antipyrine or plenacetin are generally given, though their effect is very slight. Bromide of potassium or ammonium is generally necessary to procure sleep, as insomnia is a most common and distressing symptom. A free use of stimulants is absolutely necessary, and the recumbent position must be strictly maintained, as death in apparently promising cases has occurred more than once or twice, on the patient getting up when the nurse's back was turned.

There was in the Alice Memorial branch an experimental treatment adopted, the injection hypodermically of iodide of mercury, according to the formula of Dr. Sims Woodhead, for which success is claimed.

Musk has been given, but it is more costly and not more efficient than alcoholic stimulants.

The patient is placed on a milk and beef tea diet and carefully watched. Ice is allowed to allay thirst, and ice bags, &c. applied to head.

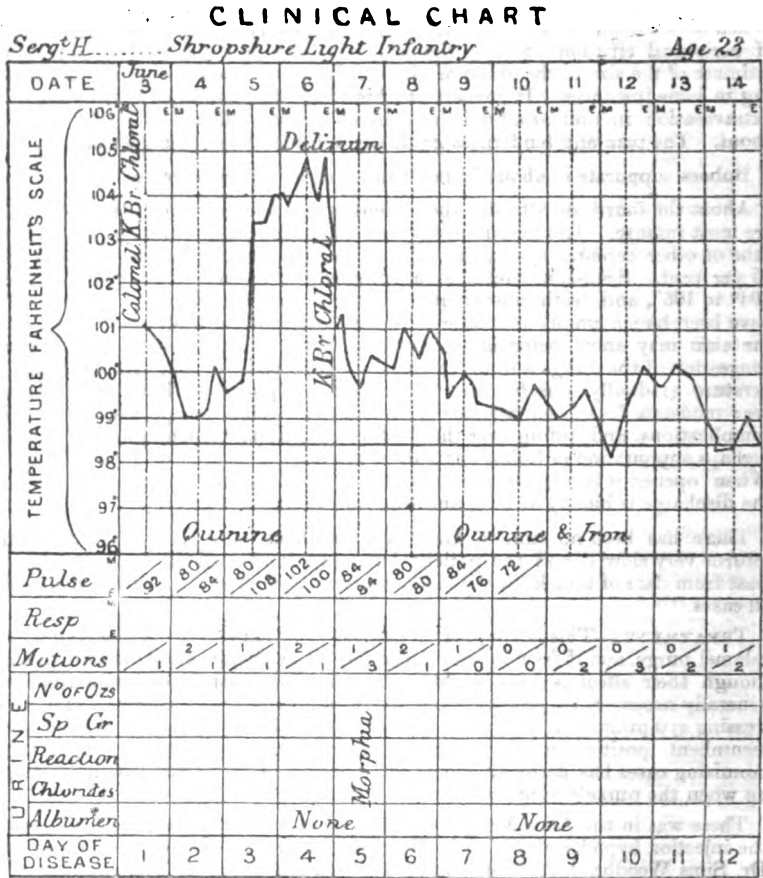
On its suppurating the bubo is opened, but it is unnecessary to make incisions previous to its suppurating as recommended by some, and in cases where this has been done no benefit has accrued, and it is to be deprecated as it only increases the exhaustion of the patient.

Poultices and applications of belladonna to the bubo allay the pain, and other symptoms must be treated as they arise.

The Chinese treatment has been alluded to, and may pass without further notice.

The temperature charts annexed are those of two cases of men of the Shropshire Light Infantry, both recovering. Both these soldiers have been employed on the sanitary work of cleaning and disinfecting houses of Chinese.

The period of incubation in both cases was five days, and the disease commenced with a feeling of malaise, and fever; some vomiting also occurred. Both had buboes in the femoral region, which were apparent at the date of admission, and which ultimately suppurated, and were incised.



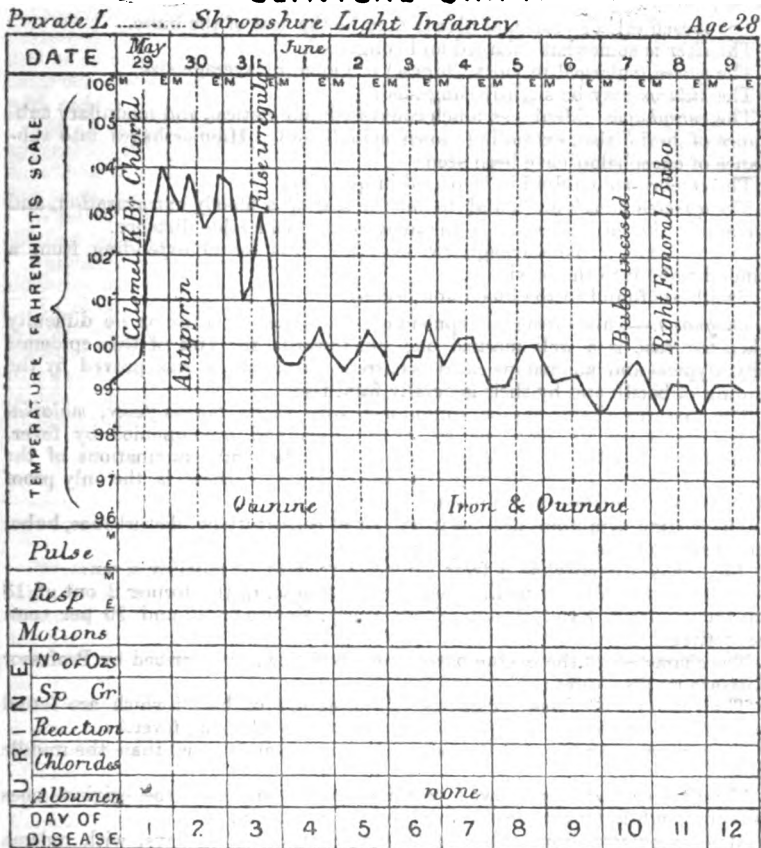
The temperatures are very typical of the disease. In the case of Private L—, who was the first to be attacked, the temperature rose sooner after admission than in that of Sergeant H—, upon whom quinine seemed to have some temporary effect, but it will be also noted that in one case, the third, and in the other the fifth day, were the days of crisis, and these are the most common days on which death occurs early in the disease.

Insomnia and headache were marked symptoms, and the complaint is in its essential symptoms singularly like typhus fever. The points of difference seem to be that typhus tends to recovery, plague to death, that buboes are very exceptional and generally only sequela in typhus, whereas they are the rule in plague.

In abortive plague the bubo occurs without fever, thus making it unlikely that typhus has any real connection with plague.

The presence of the plague bacilli finally determines the nature of the complaint.

## CLINICAL CHART



The patients were not finally discharged from hospital till the middle of August, as the wounds consequent on incising the buboes were very slow to heal.

Three months was the approximate period in which complete convalescence took place from date of attack.

**Post-mortem appearances.**—The corpse is generally more or less blue immediately or shortly after death, and rigor mortis is early and evanescent, decomposition setting in with great rapidity.

The blood is fluid and cherry-coloured, and the tissues are a good deal stained.

The skin is sometimes slightly jaundiced.

The bubo if present is felt to be surrounded with infiltrated serum. Sordes are to be seen on teeth. Frothy saliva issues from mouth and nose (and I have twice seen, on one occasion 17, and on another 32 round worms coming out of the nose). The enlargement of glands may be very slight or not palpable at all when death is early.

The pericardium and pleura are found sometimes to contain serum. The heart, muscular fibre is softened, and the endocardium stained. The bases of lungs are often congested.



The stomach and intestines have generally their mucous membrane hyperæmic, and in some cases the solitary glands are enlarged.

If hæmorrhage has taken place from the bowels they contain some of the effused fluid.

The mesenteric or bronchial glands may be the seat of the bubo.

The liver is somewhat enlarged and congested.

The spleen (enlarged in most Chinese) is above the average size.

The kidneys may be slightly congested.

The encephalon. Meninges much congested and cortical, and medullary substance of brain also, extending down spinal cord. Hæmorrhages into substance of encephalon have been seen.

The cerebro-spinal fluid is increased in quantity.

The affected glands are found to be the seat of a bloody extravasation, and surrounded by effused serum, sometimes for a considerable distance.

In one case a hæmorrhagic extravasation was found extending from a femoral bubo into the pelvis.

Bacilli are found in the blood and organs.

*Diagnosis.*—This during an epidemic is a matter of little or no difficulty when the case is a well marked one, but towards the end of this epidemic very atypical and anomalous cases occurred whose nature was proved by the finding of bacilli and by their generally fatal issue.

The diseases which may be confounded with it are *typhus fever*, *malarial fever*, and cases of *bubo* due to other causes and accompanied by fever. Doubtful cases should be placed under observation and examinations of the blood for bacilli should be made, as the finding of these is the only proof absolute of the disease being plague.

The leading symptoms are great gravity of constitutional disturbance, bubo, and furred tongue, the latter very typical.

The period of incubation is from three to five days, or possibly seven.

The mortality differed in Europeans and Chinese, in the former 2 out of 13 attacked, in the latter 9 out of 13 nearly, dying, or 15 and 70 per cent. respectively.

The characters of the plague bacillus are as follow, as described by Professor Kitasato its discoverer:—

They are one of three organisms of the nature of bacilli which are found in the blood, the others being that of anthrax, and relapsing fever.

They have capsules, and the poles are more easily stained than the middle part.

The first cultivations showed bacilli differing only from the original ones in being slightly longer, and staining better in the middle.

Mice inoculated from spleen and blood died in two days, with œdema around the point of inoculation, and the same bacilli reproduced in the blood and internal organs.

All animals inoculated from cultivations died in from 1 to 4 days, according to size, with the same symptoms.

These bacilli were found in all persons examined who had died of plague, in the buboes, spleen, lungs, liver, and blood in the heart, in fact everywhere, and every cultivation from them produced the same bacilli.

They show very little movement, and are strongest in blood serum, which they do not liquefy.

The colonies in tube cultivations have a globular appearance, and are like glass wool.

They grew best at a temperature of 28° to 30° C. They were not seen by Professor Kitasato to form spores.

The disease was produced in mice, rats, and guinea pigs by inoculation, and in mice and guinea pigs by feeding with pure cultivations of bacillus, and small pieces of spleen of persons dead of plague.

The dust in houses where cases of plague had occurred was introduced by inoculation into mammals, and produced plague in the case of one mouse, and tetanus in the majority.

(Trismus is a very common cause of death here, and tetanus bacilli very frequent in the dust of all houses.)

The bacilli die on desiccation and exposure to the sun after four hours.

*Heat.*—At 80° C. those heated for 30 minutes were destroyed; at 100° C. they were dead in a few minutes.

*Carbolic Acid.*— $\frac{1}{2}$  per cent. and  $\frac{3}{4}$  per cent. solution for one hour did not kill; a 1 per cent. solution killed in one hour.

*Quicklime.*— $\frac{1}{2}$  per cent. retarded growth; 1 per cent. killed.

Here it may be stated that Dr. Yersin, the French bacteriologist, discovered that at a depth of seven inches sufficient plague bacilli to produce a very large cultivation were obtained from the floor of a house in Taiping-shau infected with plague.

The animals inoculated with these bacilli did not die, but the characters of appearance of the bacilli were identical with those of the plague bacilli. They were evidently not virulent. They have been found again in other houses, but produced no symptoms on animals inoculated with them.

Whether they are attenuated cultivations of the real plague bacillus or a distinct bacillus is a matter hitherto of conjecture.

Further results are expected of Professor Kitasato's researches, which will doubtless appear in due time.

He recommends disinfection of houses attacked by 2 per cent. solution of carbolic acid or quicklime, of clothing by steam at 100° C. Burial of dead at 3 metres from surface, disinfection of fæces with quicklime. Removal of dead rats and mice with proper precautions, and isolation of plague patients for one month after apparent recovery. Care in the obtaining of food to avoid infected sources.

### PART III.

*Drainage of Victoria.*—The old system.—'This is a combined system, carrying off storm water and sewage in the same channel into the harbour by means of brick or granite drains and sewers which open at various points along the harbour front of the town. The objections to the system are :—

1st. That in the winter months, from November to April, there is no rainfall, and the channels are of square section and so large that they cannot be effectively flushed, and the solids subside to the bottom and accumulate there, a small trickle of liquid matter running over the accumulation of sediment. This is a cause of bad smells, and is highly objectionable from a sanitary point of view.

2nd. The material of which the drains are made is red and blue brick for the house drains and granite for the sewers. The joints frequently become defective, and consequently the soil round about becomes saturated with sewage.

These objections are enough to condemn the system.

The system now adopted by the Government is the separate system.

Roughly, it is as follows :—

The storm-water channels of the old combined system are to be used where applicable for the reception and conveyance of storm-water alone. These are very necessary, as the rainfall at Hong Kong from May to September is exceedingly heavy.

The sewage proper (with the exception of fæces which are removed by hand in buckets from houses in the main) is to be received into stoneware pipes of small calibre laid to self-cleansing levels, and conducted into the sewers, which are also of stoneware, and discharge into the harbour at two points, which are chosen as places at which there is a good tide scour. There is to be an intercepting sewer with a slight fall (which is to be assisted by pumping stations) parallel to the shore. The present water supply is estimated to be sufficient to ensure the drains being always half full, and this arrangement in theory appears quite perfect. The sewers are to receive a small portion of the storm waters to help to flush them. But the construction of this system is not nearly complete, and the drains are at their worst. Only one-third of the houses have been connected with the system; the remainder are connected with the old sewers. The outfall of one of the sewers was obstructed by the new reclamation works now in progress. The rainfall was so late and the dry season so long that the colony was stinted badly in its water supply; thus

neither system had a chance of being flushed and the smells in the town were unusually bad. The slope upon which the main part of the town of Victoria is built would seem to leave no excuse in the matter of being able to obtain a good fall, which is the main difficulty in drainage. The difficulties to be contended with are :—

1. The water supply is at present quite insufficient, as during the dry season there is always a deficiency.

2. The houses of the Chinese poor are so constructed that it is difficult to drain many of them, and the occupants abuse the drains which exist by putting miscellaneous articles into the openings, which obstruct them.

It has been proposed to construct specially modified drains in Chinese quarters to obviate this evil.

To augment the water supply it will be necessary to increase the capacity of the existing reservoirs.

It is impossible that the full benefit of the separate system can be felt until all house drains are connected with the system, and until the water supply has been increased so as to give a full supply all the year round.

But there are now so many defective drains and other insanitary conditions that to remedy them alone will vastly improve the health of the colony.

#### CHINESE HOUSES.

There are many houses built *back to back* to economise space, and this arrangement is a very bad one, as it leads to certain insanitary conditions :—

1st. Obstruction of ventilation.

2nd. Obstruction of light.

3rd. To the drains necessarily passing under the floor of the house; 60 feet being a frequent length of piping required for the house drains.

A glance at the following sketch (A.) will show the latter fault.

In high houses the light and air are almost entirely excluded from the lower storeys, and the people who live in the houses contract the ventilating shaft by roofing it partly over, either to gain in floor space above or to keep the rain from falling into the small yard below.

Sketch (B.) shows the shaft usual in back-to-back houses, in which the kitchens are in the house itself, and only partitioned off from the dwelling-rooms.

The attached sketches are intended to convey an idea of the arrangement often found in Chinese houses of the ordinary class, and to show how much over-occupied the dwellings are.

The house represented is not one of the worst class, which have two rows of cubicles and only a narrow passage between them.

The effect of the arrangement is to stop all ventilation and render the place perfectly dark.

The *mezzanine floors* are permitted by the late building ordinance within certain limits, which are, that if there be 6 feet clear both above and below the floor, reckoning to the joists, the mezzanine floor may extend to two-thirds of the area of the room. If 9 feet clear above and below the floor may cover the whole area.

These regulations have been grossly abused, and in a total of about 7,000 houses 1,500 irregular mezzanine floors have been found, many of them being constructed in rooms only 9 feet high, and some having cubicles constructed above them. Each cubicle is occupied by from two to six persons, and a room of the dimensions of  $40 \times 15 \times 12$  feet often contains 25 persons or more, each thus only getting 240 cubic feet or less, without counting furniture, &c.

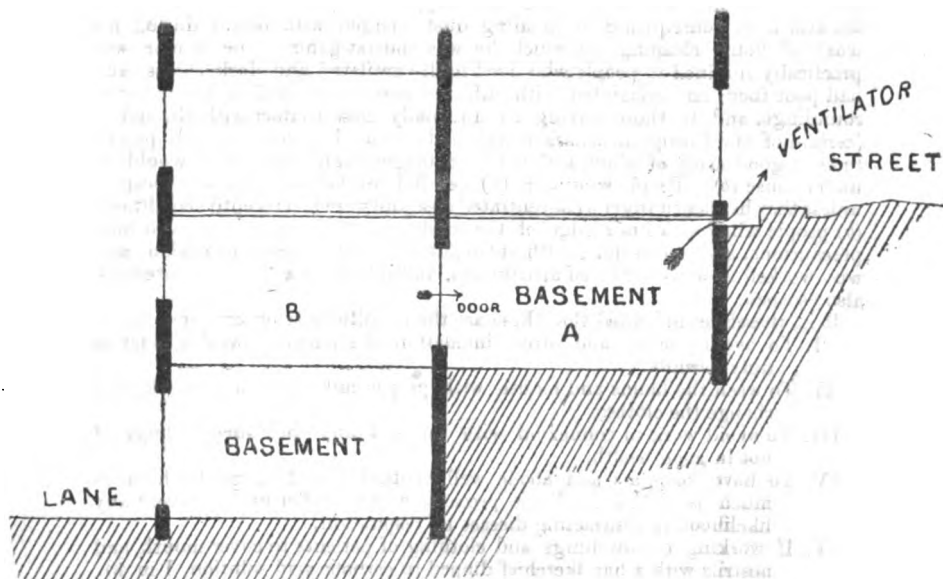
The above represents a very ordinary case. The ventilation is little or *nil* as they keep the windows shut and build the cubicles to the ceiling or mezzanine floor to exclude thieves.

The floors, if ground floors, are of either rammed earth or earth covered with tiles, or granite blocks without cement, and are not kept clean.

Upper floors are often imperfect, and 2 inches of dirt and earth worms have been found on some of them. They are sometimes planks covered with tiles on joists, and sometimes planks on joists.

In the case of basements the arrangement is much the same, and not a ray of light penetrates beyond the first cubicle, the inhabitants using candles and oil lamps.

There are in some parts of the town, notably in Taiping-shau, certain houses (worse even than ordinary basements which open on one side into streets or lanes), which have no means of access except through other basements or rooms, as below:—



In the case of the room marked A, access is gained by a stair from the lane, or through the room marked B, and the room is pitch-dark at all times.

Cubicles and mezzanine floors are universal in Chinese houses.

The drainage of such houses is, of course, exceedingly bad, or they are not drained at all.

All the cooking has to be done in the dwelling-room, and it is very usual to see smoke-blackened windows, and to find a room full of smoke in such houses.

The drainage of lanes and yards, too, is very bad in such houses (two-thirds of the houses in Victoria), as they have not been connected with the separate system now adopted by the Government, and as often as not the drains, which are made of blue or red brick, leak into the soil. There are a good many wells in the courts, and in some cases inside the houses, into which the soil so contaminated drains. The old drains are untrapped.

The latrine accommodation in Victoria is very inadequate, the men going to public latrines, either Government or proprietary ones, and the women and children always using earthen pots for the reception of excreta, inside the houses, or where they exist, in the back premises. The excreta are removed either to night-soil boats or to neighbouring cultivated lands, and this is often not done for several days together, the result being that the fermentation gives rise to foul odours about houses and latrines.

The kitchen drain is universally used as an urinal.

It will be seen from these statements that the sanitation of dwellings is very bad, and that there is small cause for wonder at the plague having affected a good many of their inhabitants.

The measures proposed for the improvement of these conditions are given elsewhere.

*Personal Prophylaxis.*—The bacillus, so far, is known to gain access by (a) *respiration*, (b) *inoculation*, and (c) *food*. It is, therefore, a sufficiently remarkable fact that only one person in attendance on the sick or burying the dead has been attacked, though very many have had a day or two of indisposition, e.g., sore throat, vomiting, diarrhoea, while the hospitals were full, and of the working parties when the work of house cleaning and disinfection was going on. The person who had been in attendance on the sick, and who contracted plague and died of it, was a nun, who developed slight fever five days after the branch of the hospital at which she was working had closed. It is a slightly doubtful case as to its real origin, but probably the disease was contracted in nursing. No doubt, all of us who were in constant communication with the sick inhaled germs continually, and Captain Vesey certainly got his attack in consequence of inhaling dust charged with bacilli during his work of house cleaning, at which he was indefatigable. The disease was practically confined to people who lived in ill-ventilated and dark rooms, and had poor food, and cohabited with infected persons or lived in infected surroundings, and to those having an unusually close contact with the sick—(certain of the Europeans attacked had had sexual intercourse with prostitutes, a good many of whom suffered from plague)—and these cases would be under cause (b). People who were (a) well fed and housed generally escaped, unless they happened to get a concentrated dose and were in a receptive condition; (b) people who had a knowledge of the conditions of reception, and who took precautions, such as washing with antiseptics, avoiding direct inhalation, and who worked in well-ventilated apartments, and inhaled fresh air at intervals, also escaped.

It is, therefore, indicated that these are the conditions to observe, viz.:—

- I. To avoid contact and direct inhalation of a patient's breath, as far as duty permits.
- II. To wash the hands and mouth with proper antiseptics after work, and change the clothes.
- III. To avoid work in connexion with the sick and their surroundings, if not in good health.
- IV. To have hospitals and abode well ventilated, and to get fresh air as much as possible. These precautions are sufficient to prevent any likelihood of contracting disease by respiration.
- V. If working on dwellings and clothing of patients to cover mouth and nostrils with a handkerchief dipped in carbolic acid solution, 1 in 40.

**Inoculation.**—Professor Kitasato and Dr. Yersin proved the inoculability of the disease upon rabbits and guinea pigs. It has also been noticed that the site of the bubo seems to be determined by the existence of a scratch or cut of the area from which the affected glands absorb. The Chinese Coolies always go barefoot or with grass shoes, and abrasions and cuts are very common on their feet. The vast majority of buboes were in the femoral region. It is possible that these, or some of them, got their attack by inoculation.

The precautions for prevention of this mode of contraction are sufficiently obvious.

**By Food,** including water. The affection of human beings by this mode of access of the germ has not been proved, but it is highly likely. Prof. Kitasato fed mice, guinea pigs, &c. on cultivations of the bacillus, and also on buboes, portions of spleen, &c. of affected animals and persons, and produced the disease in this way.

The precautions against attack thus may be as follows :—

- I. To boil all water.
- II. To eat no uncooked food.
- III. To be sure of the impossibility of contamination of all food matters by servants, shop-keepers, or merchants.

**General Prophylaxis.**—The drainage, water supply, food supply, ventilation of streets and dwellings, removal of dust have to be most particularly looked after. In this place night soil and urine are used for the manuring of fields and market gardens by the Chinese. This may be a source of danger to consumers of vegetables.

All wells not protected from contamination should be closed.

The source of food supply, as bakeries, butcheries, &c. should be carefully watched.

Overcrowding of dwellings should be prevented. Streets should be kept scrupulously clean, and rubbish of any description must be removed and not allowed to accumulate.

All combustible rubbish should be burned, and incombustible rubbish taken out to sea. The sewers should be flushed at frequent intervals.

Dead rats and other animals should be treated as possible sources of infection, as the bacteriologists have found plague bacilli in them; and as large numbers of them had died, first, previously to the epidemic among human beings, and since then during its continuance it is reasonably imaginable that the epizootic among them may be the effect of the same bacillus, as is beyond doubt the cause of the plague.

(In most epidemics of this disease there has been an epizootic among rats and sheep preceding it. An epizootic occurred among pigs in Canton.) The floors of all dwelling-houses should be of material impervious to gas or water, as it is possible that the bacillus thrives in the ground, at all events near the surface in infected houses, and it is probable that it regains its virulence there, and in favourable seasons flourishes and gives off quantities of germs and spores, hence the floors should be made incapable of absorbing fluid from above and permitting the egress of gases carrying microbes from the ground beneath. House drains should be trapped and well constructed.

It is probable that the germs may be carried by the clothing of persons sick of plague, and such absorbent articles as are in contact with them or have received their dejecta and breath. Such articles when possible should be destroyed or disinfected by heat.

The patients should be immediately isolated and segregated in hospital and the apartment occupied by them thoroughly disinfected, their clothing, &c. being dealt with as described above.

The other occupants of an affected house should be watched, and if several cases occur in a house the remainder of the persons, if any there, should be removed from such house to temporary quarters to be under observation. The period of observation should be eight days.

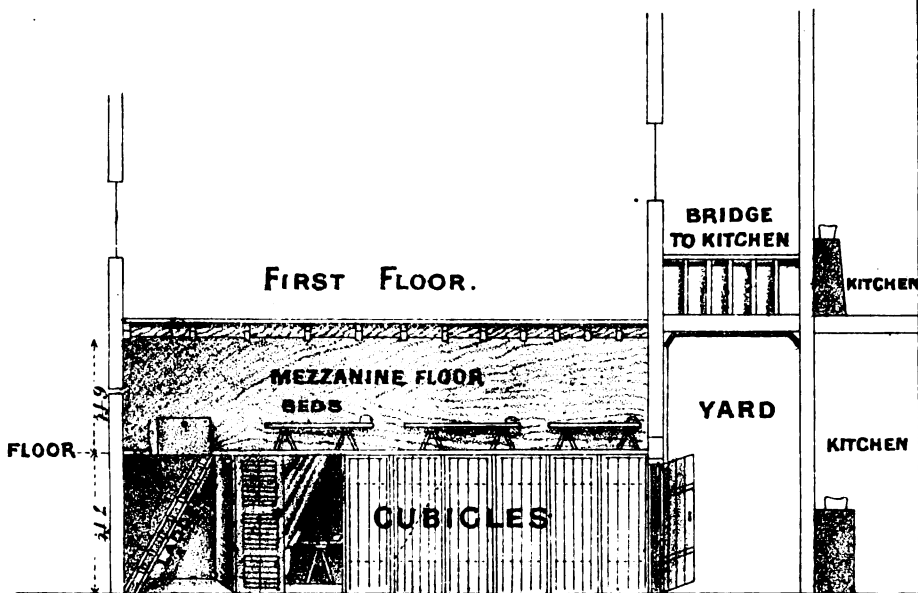
All obstructions to ventilation should be summarily removed from houses.

If there are houses which have contained patients in such numbers and sequence as to make it likely that the plague is indigenous there by reason of the germs multiplying in its structure, such houses should be evacuated and closed, and the woodwork destroyed and burned within the walls: the floor or

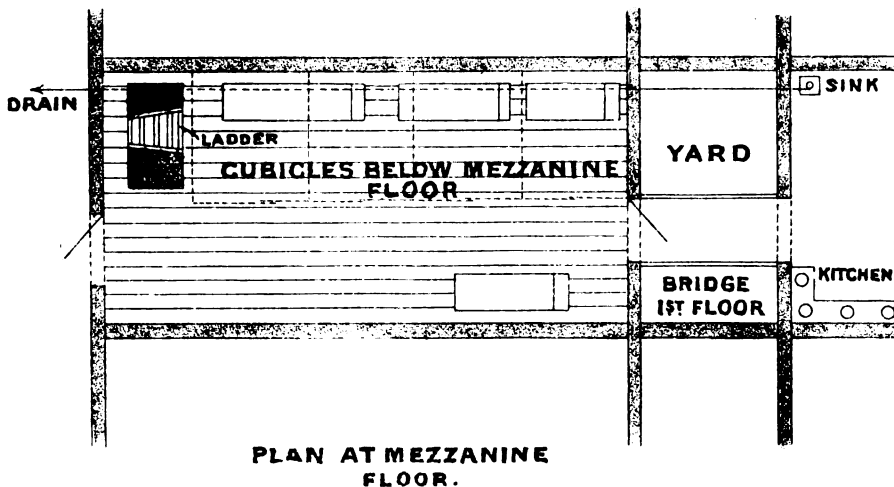
the ground should be disinfected by quicklime and re-cemented, and it should stand empty with doors and windows open for fourteen days at least. The woodwork may then be renewed and the house reoccupied.

I am indebted for information, other than that gained by personal observation, in this report to Dr. J. A. Lowson, Superintendent Government Civil Hospital, and Professor S. Kitasato, and Dr. Yersin, also to Government papers, and Mr. Ram, Secretary to the Hong Kong Sanitary Board. The pressure of work in the early part of the epidemic forbade my availing myself sufficiently fully of an almost unique opportunity of studying the clinical characters of the disease, and perhaps too much space has been devoted to the local history of the outbreak, but I hope that these shortcomings may be forgiven. The subject is too large to be thoroughly covered in a report such as this, and those who did the actual treating of the sick in hospital are alone qualified to give full particulars of the clinical aspects of plague.

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**ELEVATION & SIDE VIEW TO SHEW ARRANGEMENT OF HOUSE & MEZZANINE FLOOR.**

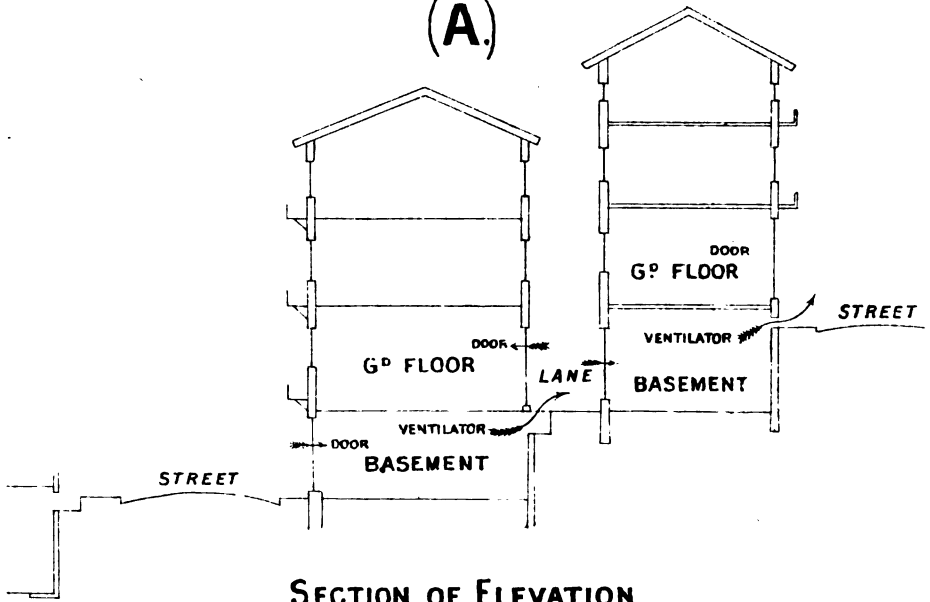


**PLAN AT MEZZANINE FLOOR.**



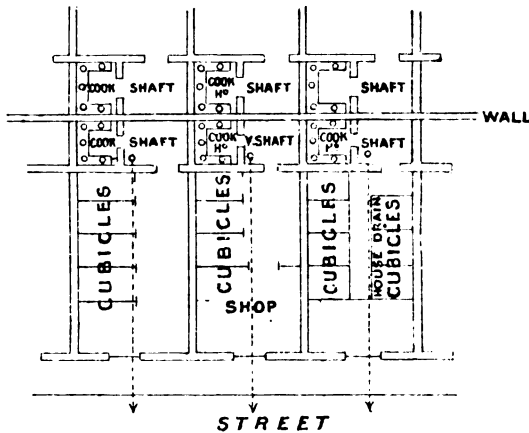


(A.)



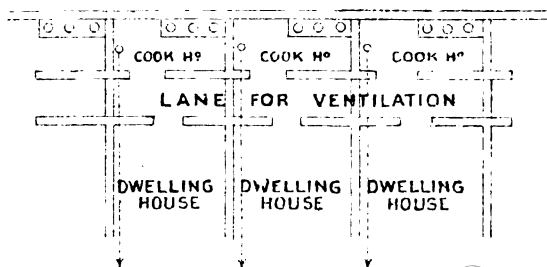
### SECTION OF ELEVATION.

*Sketch to show how basement of house on slope forms ground floor in street below with deficient light and ventilation.*



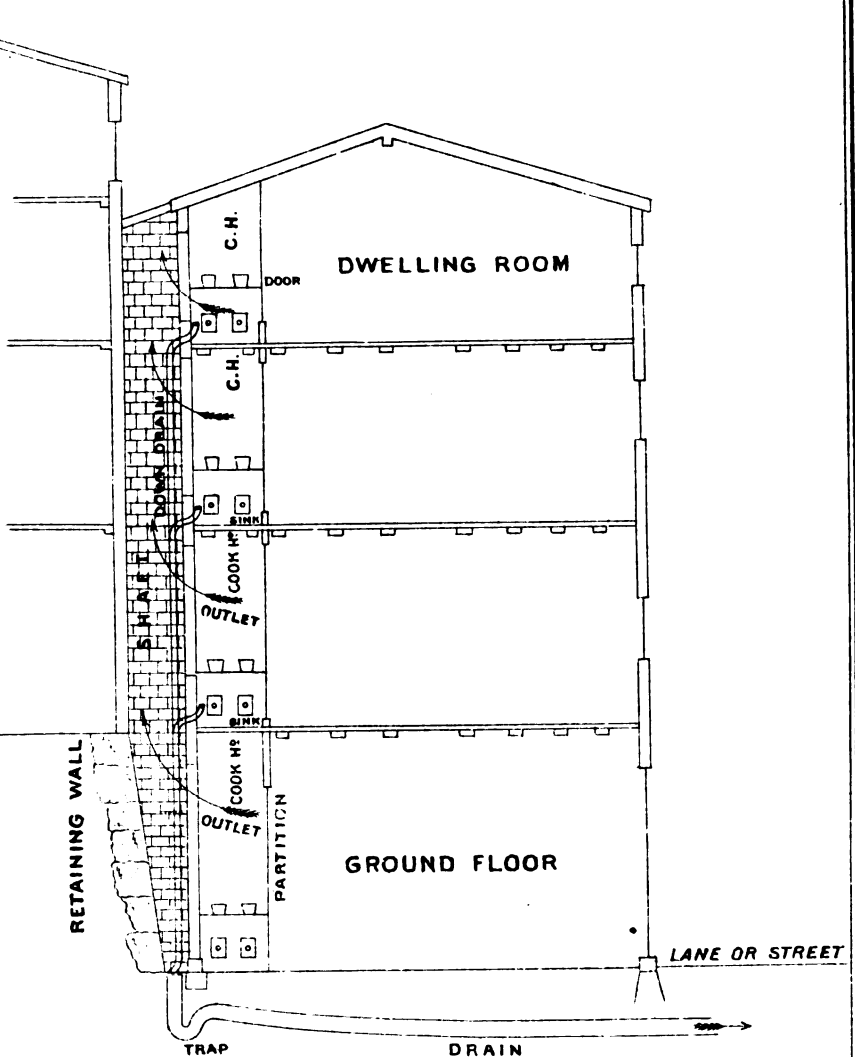
### PLAN OF BACK TO BACK HOUSES.

*Shewing ventilating shafts which are often built over & house drains passing under house. Room divided by cubicles*



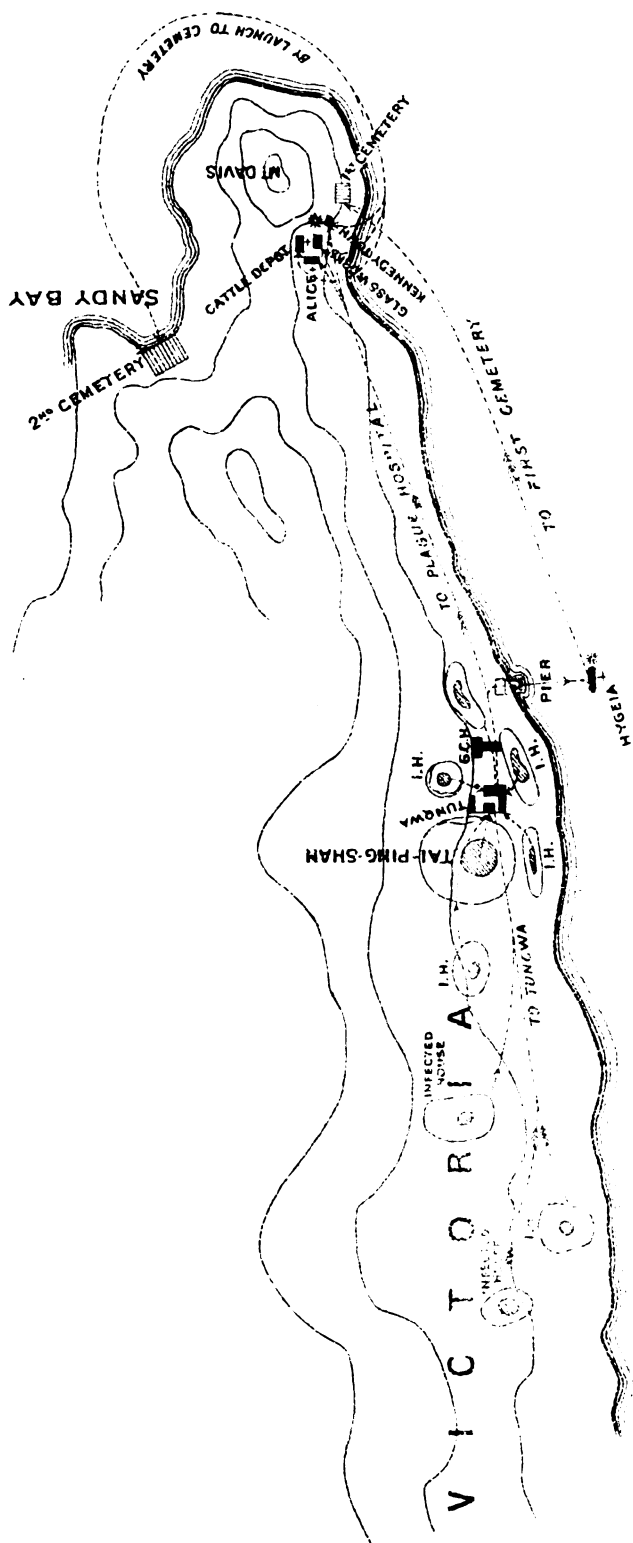


(B.)



**TO SHEW CONSTRUCTION IN BACK TO BACK HOUSES  
BEING A SECTION THROUGH VENTILATING SHAFT**





A SKETCH MAP TO ILLUSTRATE THE DISPOSAL OF SICK & DEAD OF PLAGUE AND TO SHEW  
APPROXIMATE SITES OF HOSPITALS AND CEMETERIES.

*The Glassworks Hospital was closed first*

*The Alice Memorial next*

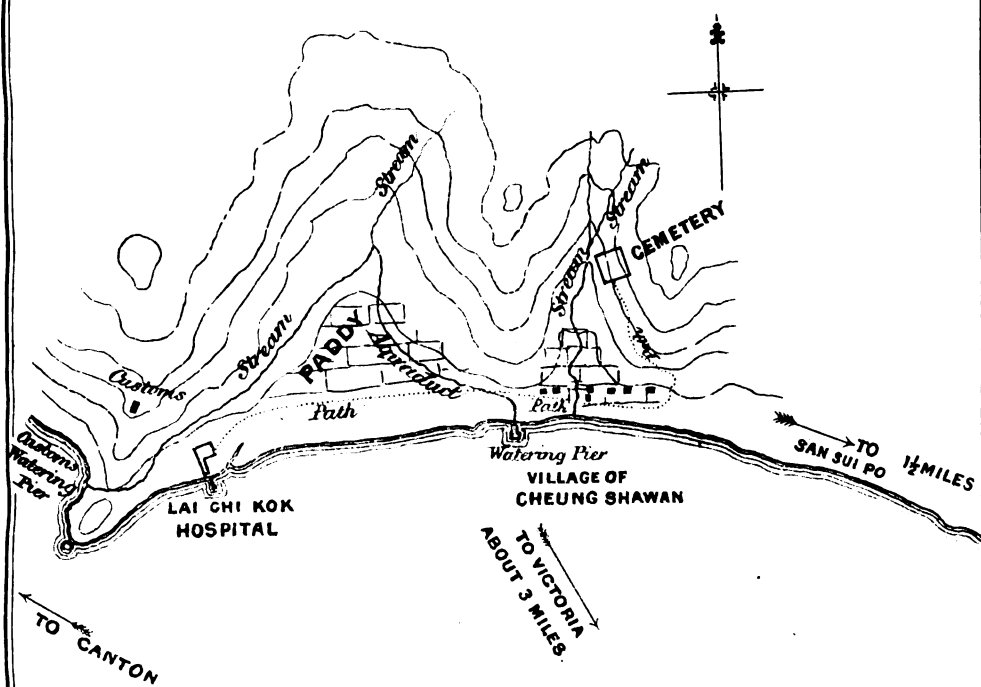
*The Cattle Depot next*

*\* Hygieia & Kennedy Town both managed by British still survive*

*† Gen'l Civil Hospital used for detention of suspected cases*



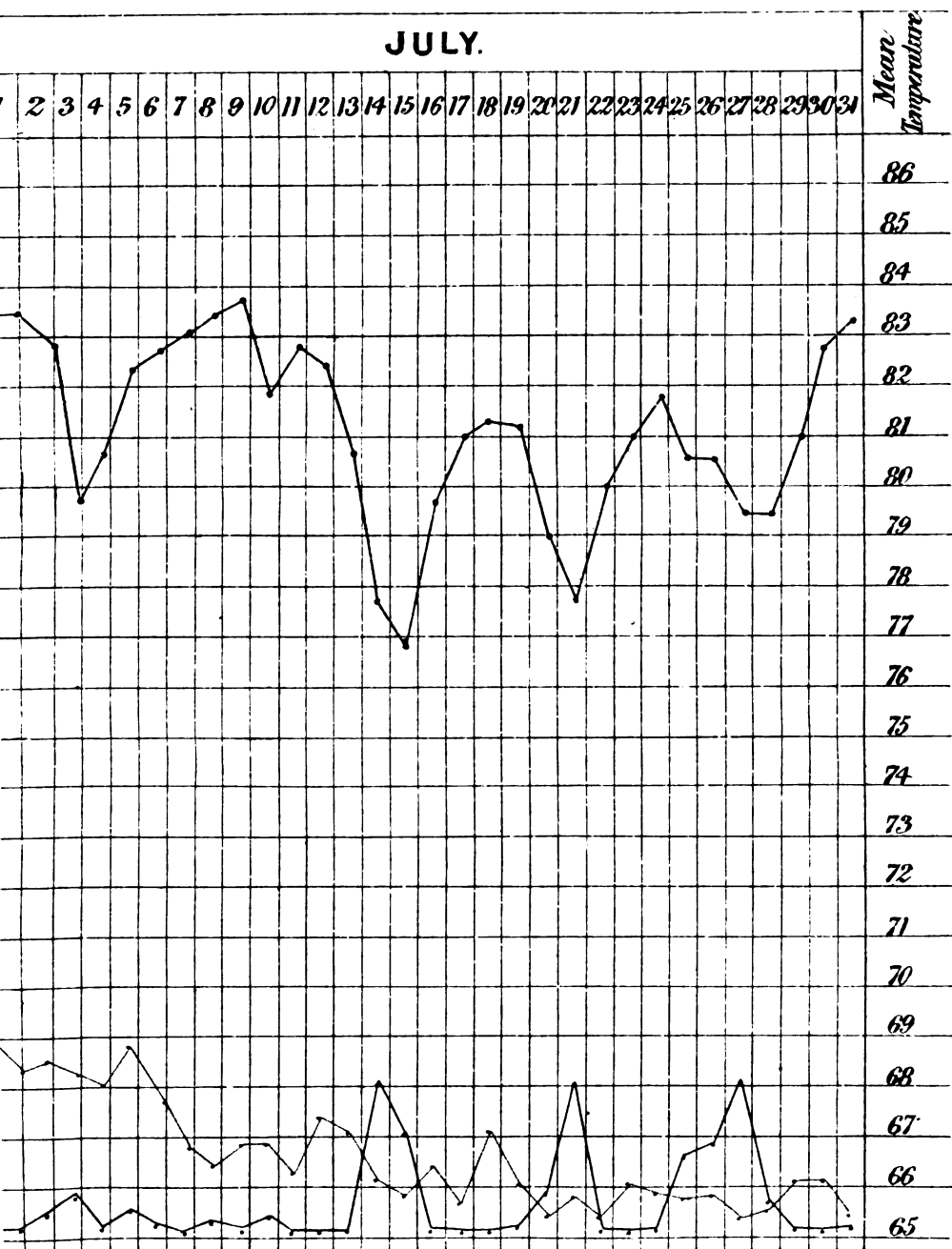
# SKETCH MAP TO SHEW LAI-CHI-KOK & IMMEDIATE NEIGHBOURHOOD.





12

una



*and the black line shows the daily mean temperature.*







## APPENDIX No. VI.

REPORT OF A CASE OF GUNSHOT WOUND OF THE SKULL  
INFLICTED BY THE NEW MAGAZINE (LEE METFORD)  
RIFLE BULLET.

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By Surgeon-Captain F. J. W. PORTER, Army Medical Staff.

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No. —, Corporal W. H—, 2nd Battalion, Scottish Rifles, was traveling from Jubbulpore to Saugor on escort duty, and when near Bhopal was shot with a magazine rifle bullet. As far as can be ascertained he was lying asleep on his back, with his left arm lying across his face and head.

When admitted into the Station Hospital, Saugor, India, two days afterwards (May 14th, 1894), he was found to have the following wounds :—

- (1.) In a line with and about 3 inches above the tip of the left internal condyle was a small circular wound.
- (2.) On the front of the arm, and a little higher up than the other, was another wound similar in shape, but a very little larger. These were probably caused by the same bullet, which had passed on the inner side of the humerus and had not injured the great vessels or nerves.
- (3.) On the face, 1 inch below the inner angle of the left eye and passing through the nasal process of the superior maxillary bone, was a small depressed wound.
- (4.) About the centre of the right half of the soft palate was a circular patch of ecchymosis, which apparently had been caused by something which had perforated it.
- (5.) At the back of the skull was another wound, circular in shape and larger than the face wound. It was situated at the posterior border of the right sterno mastoid, on a level with a line dropped vertically from a little below the centre of the pinna, with the patient lying supine.

There was some ecchymosis of the left ocular conjunctiva and of the tissues round both the head wounds.

There was deviation of the tongue to the right, and wasting of the muscles on that side. The sense of taste was normal.

His voice was weak and husky, and on laryngoscopic examination, there was found to be paralysis of the right vocal cord.

It did not move on deep inspiration, or during phonation, but the left cord moved across the middle line towards the other one, although it could never be accurately approximated to it.

There was some difficulty in swallowing liquids owing to their passing into the larynx, and there was tenderness on the right side of the neck.

Free discharge of foetid pus from the nostrils, which were frequently irrigated and iodoform blown in.

By May 28th the head wounds were practically healed, and there was no discharge from the nose.

Up to May 21st there had been no rise of temperature, but on the evening of that day it rose to 101·4°, and the arm became much swollen as high as the axilla. Some pus oozed from the wound in a line with the internal condyle. This was enlarged and a tube inserted.

Pus continued to run away, so on June 1st the wound was enlarged, the little finger introduced, and the cavity which existed examined. Lying near the wound on the anterior surface of the arm (which at this time had healed) an irregular body was felt. A pair of dressing forceps were introduced and it was extracted.

It was found to be one of the wads of a magazine cartridge, and corresponded with a fresh one when compared with it.

After this the wound healed rapidly, and the patient was discharged from hospital on July 10th. The paralysis of the tongue and vocal cord remained unimproved, but otherwise he was in good health.

Remarks.—This case is, I think, interesting for the following reasons:—

- (1.) The severity of the injury to be followed by recovery. The bullet must have passed some very important vessels, &c. in the neck, and must have gone very close to the base of the brain. I think there is no doubt that if the same injury had been inflicted by a Martini-Henry bullet the case would not have terminated so favourably.
- (2.) The rapidity with which healing took place. But for the fact that one of the wads lodged in the soft tissues of the arm and induced suppuration the patient could have been discharged from hospital on May 28th, or 16 days after the infliction of the injury. His subsequent detention in hospital was solely due to the trouble in his arm.
- (3.) The cause of the paralysis of the right vocal cord. One can readily understand the paralysis of the right side of the tongue on the assumption that the hypoglossal nerve on that side had been cut by the bullet, but seeing that the right recurrent laryngeal comes off low in the neck, it is difficult to understand its being damaged by the bullet, unless we suppose it had taken an abnormal course in this case.
- (4.) The difficulty of deciding which of the wounds were those of entrance and which of exit. I think the presence of the wad beneath the skin on the anterior and inner surface of the arm would tend to show that the bullet had first entered the arm and then travelled through the face and neck.

It was intended to ask the prisoner in which direction he had fired, but unfortunately he committed suicide in his cell shortly after the news of his conviction and punishment had been received.

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## APPENDIX No. VII.

## TWO CASES OF CONCUSSION OF THE SPINAL CORD.

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By Surgeon-Major F. J. LAMBKIN, Army Medical Staff.

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About 9 p.m. on the night of 17th July 1894, No. 3508, Pte. J—, 1st Leicestershire Regiment, whilst being brought under escort to the guard room, broke arrest and tried to escape. He jumped down the side of a precipice, fell a distance of some 80 ft., and landed on the dried-up stoney bed of a river. Patient was drunk at the time he made his attempt to escape. It was only after a long search that he was found, and then he had to be dragged up by ropes placed round his body. On getting him up he was carried to the Station Hospital, Newcastle, Jamaica, where I saw him at once. Patient was semi-conscious, but it was hard to say whether this was due to the fall or to the effect of alcohol. There was a very strong smell of the latter from him. Pulse was good, extremities cold, and he was trying to vomit. I ordered an emetic and hot water bottles to his feet. The former took immediate effect, and patient appeared much better after it. I could detect no superficial injuries; patient did not at the time complain of anything abnormal.

He slept well that night. Next morning he was quite conscious, but remembered nothing of what took place the previous night. He told me that he had been a total abstainer for a long time until the previous day, when he took to drink again. Temperature was 99.2° F.; pulse good. He complained of severe pain in the back of the neck, which was greatly intensified on rotating the head from side to side; there was tenderness over the spine, most marked between the lower cervical and upper dorsal vertebrae. He complained of a tingling feeling down both arms and in his hands; there was partial loss of motion and sensation in the latter. There were no other signs of paralysis anywhere, and the reflexes were normal.

I put the patient under chloroform to enable me to examine the spinal column. I was unable to find any sign of fracture or any irregularity in its processes. Under the anæsthetic he was unable to move his hands.

During the next few days paralysis in both hands became more pronounced, especially in the right, the extensors more than the flexors; sensation remained about the same. Patient was unable to move his head owing to the pain it caused in his neck.

He continued in about the same condition until the middle of August, when he could move his hands a little better; from that time up to the present he has gradually improved, and although motion has not altogether returned, still he is able to use both hands very fairly (to hold a book, &c.); sensation has quite returned, and he complains only of very slight pain in the neck on moving his head. There is no tenderness now over the spine. Temperature has been normal, except on the morning after the accident.

Treatment has consisted of keeping the patient at absolute rest in a darkened room (I endeavoured to keep him in the prone position, but he said it increased the pain in his neck); he is still confined to bed, now more than two months since the accident. Bromide of potassium was given in small doses to allay irritability and chloral hydrate to procure sleep. When the patient began to improve, galvanism was used, and its success has been most marked; I used the continuous current not only to the hands but to the arm and spine itself, with the best results.



On 23rd August 1894, No. 1872, Pte. G—, 1st Leicestershire Regiment, was admitted to the Station Hospital, Newcastle, Jamaica. The previous night, about 9.30 p.m., he was walking up some steps on his way to his barrack room, missed his footing and fell over the side. The height from which he fell was about 6 feet. He stated that he was sober at the time (doubtful). After falling he was for a time unconscious, when he came to he complained to his comrades of being unable to get up, a feeling of pins and needles down his legs, and severe pain in the back. He was carried into a barrack room close by, as he thought he would be all right by the morning, but when morning came he found that he could not get out of bed, as he had lost the use of both legs. He was then carried on a stretcher to the Station Hospital.

When I saw him he complained of severe pain in his neck and back on the slightest movement. There was total loss of motion, and partial of sensation, in both legs, reflexes of latter had quite disappeared, there was no rigidity, the bladder was paralysed with retention of urine, and there was marked "priapism." He complained of a feeling of numbness in both legs. Motion and sensation were partially lost in both arms and hands, and he complained of tingling in them. There was tenderness over the spine, most marked in the region about the 10th to 12th dorsal vertebræ. No sign of a fracture could be found. Temperature was normal, pulse good, respirations 18 per minute.

Patient remained in about the same condition until the evening of the 26th August, when his temperature rose to 100° F., he had a restless night; next morning temperature remained at 100° F., and rose to 102° F. the same evening; he did not sleep, was very restless, and was slightly deaf, but the mind was perfectly clear. In the evening of August 28th temperature was 103° F.; again he spent a sleepless night, and the following morning was much worse. The mind was beginning to wander and he was very deaf, respirations rapid; during the day he became delirious and paralysis began to extend upwards, temperature rose to 105° F., breathing became more difficult every minute, and he was unable to swallow.

He died at 3.30 p.m. on the afternoon of August 29th in a state of general paralysis. Pulse remained strong to the end. Temperature at death 105.6° F. Treatment in this case as in the former consisted of absolute rest in a darkened room. Ice was applied to the spine, bromide of potassium given in small doses internally, and hydrate of chloral to produce sleep. The urine was drawn off three times a day. "The quantity of urine secreted amounted to an average of five pints in the 24 hours."

In spite of the greatest possible care bed sores formed very rapidly in this case.

#### *Post-mortem.*

*Head.*—On removing the scalp a large ecchymosed spot was found on the top of the skull. No fracture to be found. Cerebral meninges were slightly injected. No adhesions.

*Brain.*—Weight, 2 lbs. 14 oz. The lateral ventricles contained about 1 oz. of reddish fluid in each of them. Brain substance normal, a good deal of reddish fluid welled up from the spinal canal.

*Spine.*—There was no fracture of any of the vertebræ, neither could a dislocation be found.

On opening the canal the cord was found lying in a pool of dark reddish fluid, the latter filling the arachnoid. The membranes were densely injected, showing every sign of acute inflammation. The substance of the cord appeared to be normal.

With the exception of the lungs and spleen, which were slightly congested, all the other organs were normal.

Considering the rarity of this accident it certainly is a curious coincidence that in a small garrison like this, under 400, and within a few days over a month of each other, we should have had two such cases. The circumstances under which the accidents occurred were almost the same, with the exception that in the first case the man fell down a fearful precipice some 80 ft., and in the other the height from which the man fell was nothing in comparison, only

a few feet. It certainly seems a curious fatality that the latter case should turn out by far the gravest, the injuries being quite out of proportion to the fall.

In the first case I was unable to detect what part of the man's body struck the ground first as there were no marks, and nothing to enable one to form an opinion.

In the second case there is evidence that the top of the head struck the ground first, in which case it appears to be an extraordinary thing that the brain and its membranes should have escaped with such little injury whilst the spinal cord received such a grave one, and that it was affected so low down, one would have thought that in concussion of the spinal cord, following on a fall on the head, the upper portion rather than the lower would have been affected most.

It is stated that "priapism" does not occur in spinal concussion, except where there is laceration of the cord. In this second case it was a very marked symptom from first to last, and I was unable to detect any laceration or injury to the cord itself after death.

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## APPENDIX No. VIII.

## THREE CASES OF SYPHILIS.

By Surgeon-Captain F. SMITH, Army Medical Staff.

These patients were treated in the Station Hospital, Fort Canning, Singapore, and are interesting as showing accidental infection not apparently due to coitus, visceral syphilis in an uncommon situation and unusual susceptibility to the disease, respectively.

First case.  
Erratic chancre. Gunner —, R.A., age 22, service one year. On admission showed an angry, dark red, raised ulcer with inflamed base on the ulnar side of wrist; the sore was large ( $1\frac{1}{2}$  inch diameter) and circular.

The patient said the ulcer had been there for a month, beginning on the site of a slight accidental scratch which he got he knew not how.

The medical history sheet shows no syphilis, and the man stated that he had had no venereal disease except a "running" two years before. There were no scars on the penis. The appearance of the sore was so unusual that it attracted attention, and was at once pronounced to be a probable chancre. Induration was present, but not so marked as in the smaller sores one customarily sees on the genitals.

A few days later a hard bubo appeared, on the site of Cruikshank's gland, which did not suppurate. This was followed by slight fever and a typical coppery eruption with mucous patches on genitals, tongue, and mouth.

Under mercury the patient recovered, and two months afterwards presented only the stains of the eruption.

One would expect that among soldiers living together as they do accidental syphilis would occur frequently, and it seems desirable to record any cases which do come to light. It is possible that now and again a man who states that he got his sore from the W.C. may be speaking the truth.

Second case.  
Syphilitic nephritis. Trumpeter —, R.A., age 17, service two years. In February 1893 this boy was admitted with gonorrhœa (no evidence of urethral chancre), which was followed by suppuration of glands. He left hospital in May and came back in August suffering from general dropsy with anæmia, a coppery eruption all over the body, and five or six scars the size of a shilling on each leg. The last mentioned he said were due to sores something like boils which appeared after he left hospital. A slight systolic aortic murmur was heard, but the heart appeared normal.

Patient said he felt well and had a good appetite. No pain anywhere.

Urine (50 ounces per diem) was smoky and contained quantities of albumen.

The patient denied having had any other venereal affection than gonorrhœa and bubo, but syphilis was diagnosed.

It was considered inadvisable to give mercury owing to the state of the kidneys, and after a few days on diaphoretics and purgatives, with non-nitrogenous diet, he was given iodide of potassium and iron. The dropsy disappeared altogether within a fortnight, and the urine increased in amount to 80-90 ounces daily; it became bright red, with blood, and a few blood casts were found in the sediment.

The eruption quickly vanished under treatment, but the urine became more coffee-coloured, and so full of blood, blood casts, &c., that it was quite opaque.

Throughout the patient felt well, and was anxious for more food.

By the middle of September the urine was clearing up a little, and the case was handed over to another medical officer, who states that the patient slowly and steadily improved until discharged from hospital on the 30th October, since which he has done his duty.

There is an element of doubt, perhaps, in this case, as the disease might have been due to inflammation travelling back from the urethra, but the gonorrhœa was not severe or long-continued, and was not complicated with cystitis, the glands troubling him most during his first period in hospital. Moreover, there is nothing to account for the eruption except syphilis. The absence of other symptoms seems in accordance with the usual experience that deep visceral syphilis is so frequently found in the very cases which have shown so few of the early secondary symptoms of the disease.

Private —, Lincoln Regiment, age 26, service seven years. For two years after enlistment this man had no serious illness except pleurisy. In November 1887 he was admitted in Dublin for primary syphilis, followed by secondary symptoms, which lasted 86 days. Remarked in medical history sheet as a bad form of infecting sore, treated with mercury and iodide of potassium. Five days after leaving hospital he came back with enteric fever, and it is remarked that while in hospital with this the secondary syphilis was also troublesome. At Shorncliffe, in 1888, he was twice in hospital for secondary syphilis and once for piles. The same year he went to India. In 1889 he had gonorrhœa twice, conjunctivitis, ulcer, and simple continued fever each once, all mild attacks.

Third case.  
Repeated  
attacks not  
conferring im-  
munity.

In July 1890, two and a half years after the first attack, he went into hospital with primary syphilis, and was under treatment for 88 days, the disease being remarked as severe, and treated with mercury.

A week or two after discharge he was again admitted, this time for ulcer of penis, which is said to have lasted 113 days, and been treated with mercury. After this the man had no hospital service, except short periods for ague, tonsillitis, splenitis, jaundice, and inflammation of connective tissue respectively, none of which are remarked as connected with syphilis.

In 1892 he came to Singapore, and in June 1893, two years after the second attack, he was admitted to hospital with a typical hard chancre on the remains of his penis, which was much deformed by the earlier attacks. He was given mercury. The primary sore healed in a few weeks, but about six weeks from date of onset he had fever and headache, followed by an eruption which rapidly developed into very severe rupia. A week or so after the eruption appeared the patient was remarkably well in appearance, could eat and sleep well, and weighed 11 stone 2 pounds, but he became somewhat emaciated afterwards, the disease attacking the joints and the eruption remaining very persistent. Towards the end of September he began to improve slowly, and on 3rd October he was sent home as an invalid. It is clear that this man had three distinct attacks of true syphilis which went through the regular course, and presumably he was completely cured of the first two, or he would not have contracted the disease a third time—at least this appears to be in accordance with the views expressed in Professor Hutchinson's work on Syphilis.

Medical history sheets frequently show many entries for primary syphilis, but in this case the remarks indicate that the attacks were not soft chancres and secondary ulcers returned as primary syphilis. It is evident that even two complete courses of syphilis do not always confer immunity, and do not necessarily modify the severity of the disease if contracted again; also that two attacks of virulent syphilis do not in all cases leave the subject of them permanently debilitated, as this man at date of third admission was a fine healthy looking soldier, and indeed, according to his own statement, the increase in his height and chest measurement, which are recorded as 5 ft. 6½ in. and 33 in. respectively on enlistment, to 5 ft. 10 in. and 37½ in., his present measurements, took place after the enteric fever, that is, subsequent to the first attack of syphilis.

## APPENDIX No. IX.

NOTES OF A CASE OF ANEURYSM OF THE RIGHT FEMORAL ARTERY, SUCCESSFULLY TREATED BY LIGATURE OF THE EXTERNAL ILIAC ARTERY, AT THE HERBERT HOSPITAL, WOOLWICH.

By Surgeon-Lieutenant C. G. SPENCER, M.B., Army Medical Staff.

The patient, Gr. K. —, R.A., age 33, service 7 $\frac{5}{11}$  years, was invalided from Malta in March 1894, and was admitted to the Herbert Hospital on June 25th, 1894. His previous medical history is good, with the exception of an attack of secondary syphilis in 1890. His family history is good. He attributes his present illness to an accidental blow in the right groin from the handle of a wheelbarrow in February 1893, shortly after which a swelling appeared in the groin and gradually increased in size. He took no notice of this at first, but about December, 1893, he suffered from numbness and tingling pains in the toes of the right foot, and had to fall out several times when on the march. He was admitted to hospital at Malta on January 25th, 1894, and on admission a large pulsating tumour was found, occupying the greater part of the right Scarpa's triangle, and extending upwards into the abdomen. He was treated by means of rest and iodide of potassium, and under this treatment the tumour became somewhat smaller and less painful.

In March 1894 he was invalided, and arrived at Woolwich on June 25th, 1894. On admission to the Herbert Hospital there was found to be a large fusiform aneurysm in the right groin, measuring 4 $\frac{1}{2}$  inches in length and 2 $\frac{1}{2}$  inches in breadth, and extending into the abdomen for a distance of 2 inches above Poupart's ligament. It was somewhat solid to the touch, and pulsated with moderate force, and this pulsation could with some difficulty be stopped by deep pressure on the external iliac artery above the aneurysm. The pulse in the right posterior tibial artery at the ankle joint could hardly be felt, and was much weaker than in the corresponding vessel on the opposite side. The limb was cold, but there was no œdema, and he did not complain of any pain. For two months he was treated by rest and iodide of potassium, but no improvement took place. Compression was considered inapplicable owing to the position of the aneurysm, and the fact that the abdominal wall was thickly covered with fat and very tense. On August 22nd, 1894, chloroform was administered, and the external iliac artery ligatured by Abernethy's method. A rather long incision (nearly four inches) was made on account of the amount of fat on the abdomen. The muscles having been dissected through and the transversalis fascia divided, the peritoneum was reflected inwards, and the artery secured at about the middle of its course and ligatured with carbolised silk. Pulsation in the aneurysm at once ceased entirely. The vein was not seen. The wound was irrigated with carbolic lotion, 1 in 20, and was closed, one row of carbolised silk sutures being put into the muscular fibres of the internal oblique and transversalis muscles, a second into the aponeurosis of the external oblique, and silver wire sutures into the skin. A small drainage tube was put into the lower angle of the wound. The strictest antiseptic precautions were observed throughout the operation, and the wound was dressed with mercurio-zinc cyanide gauze and salicylic wool. A flannel bandage was put on the limb from the toes to the groin, and the patient was put to bed with the limb slightly raised on pillows and hot bottles near the limb, but not in contact with it.

The amount of chloroform used was 3viss. The patient took chloroform rather badly, and it was found impossible to push the anæsthetic to the extent of completely relaxing the muscles, as he stopped breathing if this was done. Consequently the muscles were rigid all the time, and this added considerably to the difficulty of the operation.

At 7 p.m. the same evening the temperature was 100° F., there was very little shock, he had not vomited at all, and the circulation in the toes was well maintained, though they were rather cold. Tinct. opii  $\text{m}\text{xv}$ . were given to relieve pain in the wound.

Next day, August 23rd, the temperature fell to normal, and continued normal throughout convalescence. He had passed a good night, and was in no pain. The limb was put in a Salter's cradle, and kept warm by means of cotton wool and hot bottles.

On August 26th the wound was dressed for the first time, and was found to be quite aseptic. Two of the sutures, on which there was some tension, were removed. The drainage tube was also removed. The aneurysm, which up to now had been hidden under the dressings, was found to be hard and shrunken, and no pulsation could be detected.

On August 31st the wound was again dressed, and all the skin sutures were removed. It was then healed, except below where the drainage tube had been, and at the upper part where the tension on one or two sutures had caused some sloughing of the skin. The aneurysm was smaller and harder than on the 26th.

From this point convalescence was rapid and complete. The wound had entirely healed by September 15th, and the patient was allowed up on September 16th.

Throughout the case there was no suppuration whatever, and the temperature remained normal after the first two days. On first getting up the patient complained that walking brought on cramp in the calf muscles of the limb, probably owing to the collateral circulation not being perfectly established; but massage soon improved the circulation and enabled him to walk a moderate distance without inconvenience.

He left the hospital to go on sick furlough on October 22nd, with the aneurysm perfectly cured, and the operation wound soundly healed and showing no tendency to hernia.

## APPENDIX No. X.

## NOTES OF AN OPERATION FOR RUPTURE.

By Surgeon Lieutenant-Colonel F. W. TREVOR, M.B., Army Medical Staff.

Previous medical history good. On October 14th, without any apparent cause, Lance-Corporal N—— began to suffer from colic, accompanied by vomiting; during October 15th, 16th, 17th, and 18th he had no action of the bowels, and the above symptoms continued; he was unable to take any solid food.

He was admitted to hospital on October 19th. I then examined him and found that he was suffering from a small right inguinal hernia, which was easily reduced; he was ordered to remain in bed, to be fitted with a truss, and to have an enema of warm water, this acted well; but the symptoms of obstruction remained the same, and everything taken by the mouth was vomited.

There was much pain in the region of the umbilicus, the abdomen was distended and tympanitic; on pressure loud gurgling was to be heard.

Hot fomentations relieved the pain a little, some castor oil and tincture of opium was given but not retained.

On October 20th and 21st the above symptoms continued, at my evening visit on the 22nd the patient was more distressed, and the vomiting more urgent, though the ejecta were not fecal. The tongue was dry and brown, breath foul-smelling, bowels not moved since 19th, temperature 99.2.

At midnight the Orderly Medical Officer sent for me to see the patient, whose condition was now critical. Collapse and stercoraceous vomiting had set in, and as it was evident that if anything was to be done, there was no time to lose, it was decided to operate at once.

Surgeon Captain Donaldson gave chloroform, and Surgeon Captain Kiddle assisted me.

As no trace of the rupture could be detected, the abdomen was opened in the middle line from the umbilicus to the pubes, and explored in the direction of the right inguinal region, where a mass of tissue was found firmly adherent to the internal ring. After failing to detach it, I pushed the mass down with my finger into the internal ring, and then cut down upon it, as in an ordinary operation for strangulated hernia, the sac was easily exposed and opened, but the constricting band was very high up, both it and the sac were firmly glued to the intestines by inflammatory lymph; with some difficulty they were separated; a director was then passed up and the constriction divided. The bowel was found to be in good condition, and returned into the abdomen. The sac was ligatured with silk and excised, the stump was attached to the opening in the abdominal wall by sutures. There was considerable venous hæmorrhage from a large varicose vein, which was ultimately controlled by means of Spencer Wells' forceps. The abdomen, after being thoroughly cleansed, was closed: first the peritoneum was sutured with fine chromic silk, then the abdominal walls were brought together with silver wire, which was also used for closing the inguinal opening as far as possible, without removing the Spencer Wells' forceps.

The operation lasted exactly two hours; the very indifferent light greatly increased the difficulty and caused much delay. The bowels acted copiously within an hour, and a second time before morning, the vomiting entirely ceased, the distention subsided, and the patient slept comfortably.

The following morning the Spencer Wells' forceps were removed; no further hæmorrhage took place, and the wound was closed, and dressed with iodoform gauze and a large pad of boric wool and a firm bandage was applied; this dressing was not changed until the eighth day, when the wounds were perfectly aseptic, and except where the forceps had been applied primary union had taken place. During the operation every possible antiseptic precaution was taken; the intestines which protruded when the abdomen was opened were carefully protected from chill by warm pads of boric wool dipped into carbolic lotion. No blood was allowed to escape into the peritoneum.

For the first day the patient was only allowed to suck ice, then milk was given in small quantities. The wounds are now perfectly healed, except at the point where the silk ligature was applied to the stump; this is only a pin-hole opening, and it is only a matter of a few days.

The bowels act regularly, and he suffers no discomfort, nor is there any weakness of the abdominal wall.

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## APPENDIX

## Annual Abstract of Meteorological Observations taken

NETLEY.

Lat. 50° 51' N.

Month.	Mean daily Air Tem- perature.	Mean Pressure.	Air Temperature.								Tension of Vapour.	Relative Humidity.		
			Mean, 9 a.m.	Means of		Abs. Min.		Abs. Max.		Per Cent.		Minimum.		
				Min.	Max.	Temp.	Day.	Temp.	Day.			Mean.	Per Cent.	Day.
January	37.0	29.792	36.3	29.5	44.5	16.0	10th	55.5	30th	189	84	61	12th	
February	40.7	29.730	39.7	32.6	48.8	17.5	17th	56.5	24th	218	84	55	17th	
March	39.6	29.912	39.7	38.1	51.1	18.0	9th	80.0	31st	300	79	60	31st	
April	48.7	29.899	50.2	33.0	64.4	22.5	15th	78.0	6th	255	67	44	11th	
May	56.8	29.974	58.1	41.5	70.1	25.0	7th	80.0	28th	337	67	45	13th	
June	59.8	29.909	61.8	46.4	73.2	34.0	15th	95.0	28th	437	75	53	30th	
July	61.6	29.910	62.9	49.6	73.6	41.0	1st	85.3	2nd	443	75	50	1st	
August	63.5	29.838	64.4	52.0	75.0	39.0	5th	80.1	22nd	492	77	54	11, 20	
September	67.6	29.893	69.3	47.5	67.7	30.0	18th	73.0	19, 25th	430	81	52	18th	
October	48.1	29.697	49.0	38.0	58.2	25.2	24th	66.0	30th	307	83	50	22nd	
November	46.3	29.948	46.2	38.7	53.9	27.0	2nd	80.3	4th	296	86	65	7th	
December	37.6	29.901	37.5	30.6	44.6	13.2	26th	54.0	3, 15, 18	206	84	54	26th	
Year	49.8	29.858	50.4	39.0	60.4	13.2	26th Dec.	96.0	28th June	317	79	44	11th April	

GIBRALTAR.

Lat. 36° 6' 20" N.

January	55.2	29.969	52.7	50.0	60.4	45.4	26th	67.8	26th	324	77	57	16th
February	57.0	29.927	54.4	51.6	62.4	45.0	14th	69.8	7th	343	77	52	14th
March	57.9	29.904	56.6	53.5	62.3	44.6	30th	68.6	29th	363	76	48	30th
April	60.7	29.913	60.7	55.5	60.0	48.8	2nd	75.5	30th	392	73	39	25th
May	66.0	29.991	66.7	59.6	72.4	54.2	13th	78.8	21st	441	64	43	13th
June	71.6	30.017	72.9	65.0	78.3	59.2	22nd	87.4	25th	527	62	40	25th
July	75.4	29.987	75.3	68.1	82.7	64.0	16th	81.0	31st	582	62	38	11th
August	75.1	29.981	74.0	69.3	80.9	62.0	25th	87.2	1st	645	71	38	1st
September	73.0	29.990	73.1	68.5	77.5	62.0	30th	86.0	20th	618	74	52	10th
October	65.0	29.898	62.9	53.8	71.2	52.0	23rd	78.6	3rd	437	72	50	7, 16
November	60.6	30.061	58.7	55.9	65.3	46.4	20th	72.2	3rd	406	79	59	3, 19
December	56.4	30.015	54.1	50.8	62.1	43.4	30th	69.8	5th	334	76	58	6, 30
Year	64.5	29.971	63.4	58.9	69.6	43.4	30th Dec.	91.0	31st July	451	72	38	11th July 1st Aug.

\* Anemometer out of order

MALTA.

Lat. 35° 53' 49" N.

January	60.8	29.882	57.6	53.4	68.2	46.0	2, 28, 29, 31st	70.0	15, 17, 18, 19, 24th	406	82	68	10, 13
February	59.6	29.772	57.6	53.7	65.5	47.0	5th	69.4	1st	417	86	66	26th
March	61.9	29.866	59.2	55.1	68.7	50.4	20, 23rd	70.0	16 to 31	378	73	49	18th
April	63.6	29.796	61.0	57.3	70.1	52.0	21st	70.8	22 to 30	424	76	60	20th
May	66.5	29.901	66.1	60.4	72.7	55.6	1st	81.0	25th	468	72	42	31st
June	74.6	29.918	74.9	69.0	80.2	74.4	10th	85.8	5th	566	63	35	5th
July	79.1	29.899	79.3	73.5	84.7	69.2	22nd	92.0	13th	658	64	37	6th
August	80.2	29.909	80.5	74.4	86.1	65.6	21st	96.0	22nd	687	62	32	1st
September	73.8	29.900	75.7	70.9	80.8	65.2	11th	93.0	5th	623	69	34	4th
October	73.7	29.874	73.8	69.0	78.5	64.0	23, 24, 26	88.8	3rd	596	69	44	25th
November	65.7	29.974	60.5	61.1	70.3	52.4	30th	78.0	3rd	462	71	51	31st
December	61.5	29.863	60.9	57.4	65.6	53.4	1, 7th	69.4	11th	401	75	43	8th
Year	68.6	29.880	67.3	62.9	74.3	47.0	5th Feb.	96.0	22nd Aug.	507	72	32	1st Aug.

## No. XI.

at Netley and Foreign Stations in the Year 1892.

Long. 1° 20' W. Height of Barometer Cistern above Sea, 47 feet.

Mean Amount of Cloudiness.	Rainfall.			Weather.										Wind.									
	Total.	Max.	Day.	Number of Days of										Number of Observations under each Point per Month.									
				Rain.	Snow.	Hail.	Thunder Storm.	Fog.	Clear Sky.	Overcast.	Gales.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm.			
7.2	0.85	0.34	16th	11	—	—	—	1	2	16	—	8	4	4	5	—	12	15	14	—			
7.5	1.00	0.25	6th	8	4	—	—	—	2	14	—	6	9	3	9	3	13	6	9	—			
6.5	1.14	0.46	15th	6	5	—	—	1	3	12	—	7	23	3	8	1	10	3	7	—			
4.7	0.67	0.28	20th	6	—	—	—	—	12	14	—	5	19	3	7	1	10	5	10	—			
5.7	0.82	0.44	25th	5	—	—	2	—	—	—	—	4	12	1	6	7	23	5	4	—			
6.8	1.77	0.46	4th	12	—	—	1	—	3	7	—	2	5	1	3	5	33	6	5	—			
6.4	2.39	0.61	16th	10	—	—	1	—	5	12	2	5	14	1	8	2	25	3	4	—			
6.7	4.07	1.23	27th	15	—	—	2	—	1	11	2	4	4	1	5	9	32	3	4	—			
7.1	3.05	1.00	20th	13	—	1	1	—	2	15	—	1	5	—	—	2	33	10	9	—			
6.6	4.79	1.06	27th	19	—	2	—	—	1	11	—	7	11	2	3	0	10	14	13	2			
7.9	3.12	0.83	15th	19	—	—	—	4	1	17	—	6	6	6	15	2	15	4	2	4			
6.7	2.14	0.51	2nd	10	1	—	—	1	4	13	—	6	6	6	1	—	18	8	5	12			
6.6	25.90	1.23	27th Aug.	134	10	3	7	7	36	142	6	61	118	31	70	32	234	82	86	18			

Long. 5° 20' 53" W. Height of Barometer Cistern above Sea, 53 feet.

6.0	4.32	0.88	12th	16	—	1	1	—	8	8	5	3	2	13	1	1	3	17	22	—	
0.5	10.87	2.25	24th	18	—	1	—	—	3	9	5	1	1	12	2	—	9	17	16	—	
6.5	10.50	2.43	7th	18	—	—	1	—	3	12	1	—	—	5	—	—	1	5	1	—	*
6.0	5.47	1.65	1st	13	—	—	1	—	4	10	—	—	2	14	—	—	5	17	—	—	*
4.0	0.81	0.36	27th	10	—	—	—	—	7	4	—	—	5	24	1	—	2	29	1	—	*
2.5	0.57	0.37	14th	3	—	—	1	—	14	1	1	—	5	19	2	—	8	25	1	—	*
2.0	0.06	0.06	1st	1	—	—	1	—	20	—	—	—	6	26	1	—	—	26	3	—	*
3.0	—	—	—	—	—	—	—	—	11	—	—	—	—	42	—	—	1	19	—	—	*
5.0	1.05	0.78	1st	6	—	—	4	—	6	7	—	—	—	47	1	—	—	—	—	—	*
5.0	8.05	2.06	21st	14	—	—	3	—	11	10	1	—	4	15	—	—	3	33	7	—	*
6.0	1.82	0.66	8th	9	—	—	3	—	4	8	—	—	6	35	—	—	—	15	4	—	*
6.0	2.66	0.75	7th	15	—	—	—	—	5	10	—	—	5	20	1	—	28	8	—	—	*
4.9	46.00	2.43	7th Mar.	123	—	2	15	—	96	79	13	4	36	272	9	1	60	223	55	—	*

from 7th March to 11th April inclusive.

Long. 14° 30' 54" E. Height of Barometer Cistern above Sea, 70 feet.

5.0	2.84	1.06	26th	11	—	—	—	—	8	7	—	1	4	1	8	3	17	18	10	—		
6.0	1.36	0.42	4th	12	—	1	—	—	2	12	—	0	0	8	8	3	4	12	11	12		
5.8	0.71	0.30	22nd	7	—	—	—	—	4	9	—	0	0	4	7	3	5	7	8	28		
5.6	2.40	0.95	5th	8	—	1	2	—	7	11	—	0	0	8	7	0	2	10	28	—		
3.5	3.21	1.53	16th	7	—	—	—	1	12	5	—	3	5	1	2	—	2	6	4	—		
2.5	—	—	—	—	—	—	—	—	31	—	—	2	5	—	—	—	3	3	7	38		
1.0	0.38	0.38	22nd	1	—	—	—	—	23	1	—	5	2	—	—	—	2	3	11	37		
2.5	—	—	—	—	—	—	—	—	30	—	—	—	4	—	—	—	—	5	8	47		
3.7	3.61	1.80	11th	11	—	—	5	—	9	4	—	2	1	4	2	2	—	2	5	42		
5.2	1.62	0.75	5th	11	—	—	4	—	5	3	—	1	—	7	3	—	—	—	—	—		
6.8	7.16	2.28	11th	19	—	—	3	—	1	7	—	—	10	5	3	—	—	—	—	—		
6.5	1.84	0.49	1st	18	—	1	—	—	—	3	—	1	2	2	—	—	—	—	—	52		
4.4	25.13	2.28	11th Nov.	103	—	3	14	1	112	62	—	15	39	33	51	14	32	56	81	411		

## Appendix

## Annual Abstract of Meteorological Observations taken

## SCUTARI CEMETERY.

Lat. 41° 0' N.

Month.	Mean Daily Air Tem- perature.	Mean Pressure.	Mean. 9 a.m.	Air Temperature.						Tension of Vapour.	Relative Humidity.			
				Means of		Abs. Min.		Abs. Max.			Per Cent.	Minimum.		
				Min.	Max.	Temp.	Day.	Temp.	Day.			Mean.	Per Cent.	Day.
January -	43°4	29°890	42°6	37°9	46°0	24°0	3rd	62°2	14, 15th	234	79	57	16th	
February -	43°8	29°865	42°9	35°3	46°3	23°4	16th	61°2	20th	222	77	54	24th	
March -	47°0	29°848	45°9	39°7	54°4	33°0	4th	70°4	15th	258	86	46	15th	
April -	54°6	29°821	53°9	44°6	64°6	32°2	11th	80°4	17th	311	70	43	6th	
May -	64°4	29°823	63°9	53°0	75°9	47°8	5th	94°0	30th	434	65	31	30th	
June -	73°4	29°784	73°5	61°5	85°3	55°6	5th, 6th	94°4	18th	569	61	32	6th	
July -	76°6	29°767	77°5	64°0	89°3	57°0	4th	96°4	11th	571	54	34	10th	
August -	78°0	29°813	79°2	66°1	89°9	60°6	27th	100°2	3rd	550	50	30	3rd	
September -	74°9	29°900	75°9	62°9	86°9	55°4	27th	93°0	2nd, 13th	541	55	33	2nd	
October -	67°5	29°967	66°6	57°9	77°2	47°4	29th	83°4	9, 11, 12	494	70	45	1st	
November -	51°1	30°053	50°2	45°6	55°6	32°0	29th	73°4	5th	309	80	64	17th	
December -	47°3	29°923	46°6	42°4	52°4	30°8	4th	61°2	11th	265	79	60	8th	
Year -	60°2	29°871	59°9	51°1	69°2	24°0	3rd Jan.	100°2	3rd Aug.	395	68	30	3rd Aug.	

## POLYMEDIA, CYPRUS.

Lat. 34° 40' N.

January -	54°8	29°560	55°6	45°8	63°8	36°6	23rd	73°9	16th	216	68	36	16th
February -	50°0	29°502	56°9	47°0	65°0	36°8	2nd	73°6	21st	318	68	40	16th
March -	61°3	29°483	63°7	50°2	72°3	43°0	13th	88°1	10th	363	66	30	29th
April -	66°8	29°365	70°4	54°5	79°1	47°4	21st	89°7	30th	400	53	34	7, 29th
May -	73°7	29°519	78°1	60°0	87°4	52°8	21st	96°8	24th	415	44	26	13th
June -													
July -													
August -													
September -													
October -	76°9	29°506	80°3	63°1	90°7	53°3	29th	98°2	24th	465	46	26	22nd
November -	65°8	29°504	67°0	54°6	77°0	42°8	30th	87°7	4th	388	58	38	4, 6th
December -	59°4	29°597	59°3	49°8	69°5	37°2	18th	79°6	13th	334	64	43	18th

## TROODOS, CYPRUS.

Lat. 34° 55' N.

January -													
February -													
March -													
April -													
May -													
June -	67°9	24°340	67°9	55°8	80°0	45°9	12th	88°8	10th	280	43	25	22nd
July -	69°4	24°275	70°0	58°2	80°6	46°2	23, 24th	88°8	20th	285	41	25	8th
August -	69°5	24°280	69°2	57°8	81°2	51°2	31st	87°5	12th	267	42	23	5th
September -	65°7	24°340	66°3	55°6	75°8	47°4	28th	83°9	16th	247	43	26	8th
October -													
November -													
December -													

\* Aneroid.

## No. XI.—continued.

at Netley and Foreign Stations in the year 1892.

Long. 29° 3' E. Height of Barometer Cistern above Sea, 60 feet.

Mean Amount of Cloudiness.	Rainfall.			Weather.									Wind.									
	Total.	Max.	Day.	Number of Days of									No. of Observations under each Point per Month.									
				Rain.	Snow.	Hail.	Thunder Storm.	Fog.	Clear Sky.	Overcast.	Gales.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm.		
7.0	5.56	0.84	16th	23	5	1	1	—	3	16	—	9	5	11	8	8	12	2	1	6	1	
7.5	3.15	0.87	10th	20	3	—	—	—	2	18	—	8	14	1	1	14	10	3	6	1	—	
6.8	4.35	1.25	5th	17	—	—	—	4	4	14	—	19	13	2	1	10	5	2	2	8	5	
5.2	1.36	0.39	7th	10	—	1	2	—	7	8	—	4	18	4	2	18	8	1	—	5	—	
4.9	0.28	0.15	9th	4	—	—	1	2	9	9	—	8	20	2	—	5	13	1	1	12	4	
3.6	1.08	0.51	22nd	7	—	—	8	1	12	5	—	3	31	2	—	9	10	1	—	4	—	
2.2	0.27	0.14	25th	4	—	—	3	—	20	—	—	10	25	4	—	5	16	—	1	1	—	
3.0	—	—	—	—	—	—	—	—	15	—	—	2	45	9	—	5	1	—	—	—	—	
2.9	—	—	—	—	—	—	1	1	10	—	—	3	34	21	—	2	—	—	—	—	—	
4.3	2.22	0.56	23th	10	—	1	3	—	6	4	—	6	12	6	—	6	18	2	1	11	—	
7.7	6.21	1.40	18th	21	3	—	2	—	1	17	—	19	24	10	—	—	3	—	1	3	—	
7.7	7.39	2.85	9th	19	—	1	2	2	2	20	—	10	8	9	4	12	8	4	1	6	—	
5.2	31.87	2.85	9th Dec.	135	11	4	23	10	91	109	—	101	249	81	16	94	104	16	14	57	—	

Long. 32° 2' E. Height of Barometer Cistern above Sea, 460 feet.

4.5	2.03	0.43	21st	11	—	—	5	—	6	2	1	—	—	2	—	—	7	3	2	48	—
3.5	1.47	0.54	5th	8	—	1	1	—	8	7	—	—	11	—	3	3	2	15	1	26	—
3.5	1.64	0.82	24th	6	—	—	—	—	9	—	3	—	—	—	3	21	16	10	8	1	—
3.5	0.95	0.35	19th	6	—	2	1	—	10	1	1	—	7	11	5	14	8	8	6	—	—
3.0	0.13	0.07	18th	3	—	—	—	—	11	2	2	1	—	2	12	8	20	—	—	—	—
2.0	0.87	0.87	28th	1	—	—	1	—	10	1	—	1	—	1	—	6	7	13	3	15*	—
4.0	2.10	0.70	21th	9	—	—	7	—	—	2	—	—	3	4	1	8	20	22	2	—	—
4.5	1.40	0.44	20th	7	—	—	1	—	4	5	—	1	—	2	8	—	15	33	3	—	—

\* Wind observations recorded on 23 days only.

Long. 32° 53' E. Height of Barometer Cistern above Sea, 5,720 feet.

2.0	0.02	0.02	26th	1	—	—	—	—	14	—	—	—	1	—	—	5	12	—	9	15*	—
2.0	0.60	0.59	31st	2	—	1	1	—	18	—	1	3	3	1	2	5	12	7	9	20	—
1.5	0.98	0.53	24th	2	—	1	1	—	16	—	—	4	2	—	3	5	22	10	5	11	—
1.7	1.06	0.38	4th	5	—	3	5	—	16	—	—	5	3	1	—	10	13	18	2	8	—

† Wind observations recorded on 21 days only.

## Annual Abstract of Meteorological Observations taken

FORT NAPIER, NATAL.

Lat. 29° 35' S.

Month.	Mean Daily Air Tem- perature.	Mean Pressure.	Air Temperature.								Tension of Vapour.	Relative Humidity.		
			Mean, 9 a.m.	Means of		Abs. Min.		Abs. Max.		Per Cent.		Min.		
				Min.	Max.	Temp.	Day.	Temp.	Day.			Mean.	Per Cent.	Day.
January	73.5	27.558	74.6	62.8	84.2	56.6	25th	99.3	30th	594	70	43	29th	
February	72.8	27.586	73.9	62.2	83.4	51.4	10th	99.2	23rd	615	71	46	23rd	
March	71.3	27.632	71.5	60.3	82.3	54.6	2nd	93.0	15th	542	67	38	12th	
April	67.4	27.662	68.1	54.0	80.8	43.4	28th	92.9	9th	464	57	28	22th	
May	63.1	27.707	63.4	49.8	76.4	41.4	28th	87.2	5th	398	60	26	31st	
June	59.1	27.721	59.7	42.9	75.3	36.8	29th	84.4	26th	333	52	12	12th	
July	57.2	27.818	56.4	41.7	72.7	30.7	17th	83.0	13th	256	47	20	12th	
August	58.1	27.565	59.8	45.0	71.2	37.0	4th	91.0	22nd	310	53	16	8th	
September	64.4	27.639	65.0	51.9	76.9	41.0	12, 30th	94.0	4th	417	66	17	3rd	
October	65.9	27.678	67.4	54.7	77.1	45.0	1st	89.0	17th	458	70	4.7	10th	
November	69.6	28.585	71.9	57.7	81.3	51.5	22nd	97.0	11th	491	65	36	22nd	
December	72.8	27.508	76.1	61.1	84.5	50.4	19th	101.2	14th	603	68	34	23th	
Year	66.3	27.555	67.3	53.7	78.8	30.7	17th July.	101.2	14th Dec.	457	62	18	9th Aug.	

## SIERRA LEONE.

Lat. 8° 29' 30" N.

January	82.2	29.635	82.4	71.6	92.8	69.0	7th	95.0	29, 31st	824	70	34	29th
February	81.3	29.646	82.5	71.7	90.9	69.4	5th	95.5	5th	835	73	40	2nd
March	80.6	29.644	83.5	70.7	90.6	66.5	13th	94.0	3, 13th	869	73	59	4th
April	82.1	29.640	84.5	72.8	91.4	68.9	23rd	96.0	20th	905	73	55	9th
May	80.0	29.879	82.2	70.9	89.1	66.0	26th	92.7	6th	862	77	61	23rd
June	78.4	29.656	82.4	67.9	88.9	64.0	1st	91.2	24th	841	76	62	4th
July	79.2	29.634	78.7	69.9	88.6	67.0	24th	91.0	24, 31st	860	89	68	8th
August	80.1	29.689	77.5	70.2	90.0	67.0	11, 31st	92.0	23, 25th	837	88	71	13th
September	80.5	29.685	79.6	71.3	89.7	68.0	1, 30th	91.0	4, 14, 21	914	87	73	22nd
October	79.7	30.222	80.1	69.4	90.0	65.0	23rd	93.6	22nd	889	83	69	16th
November	80.2	30.237	82.3	69.9	90.5	66.0	17, 22nd	93.0	5th	928	81	66	5th
December	80.3	30.239	81.3	69.9	90.3	66.0	17th	93.0	3, 31st	931	81	62	31st
Year	80.4	29.814	81.4	70.5	90.2	64.0	1st June.	93.0	20th April.	874	80	34	39th Jan.

## BARBADOS.

Lat. 13° 7' 39" N.

January	76.2	30.007	80.4	66.7	85.7	55.0	15th	87.4	21, 22, 23	731	65	51	13th
February	76.0	30.002	80.6	65.8	86.2	61.0	2nd	89.0	28th	749	69	51	8th
March	77.3	30.002	81.6	67.4	87.2	65.0	22nd	89.2	31st	697	61	44	21st
April	77.0	30.026	81.7	67.8	86.2	63.8	4th	89.0	13th	662	57	42	23rd
May	78.0	30.028	82.9	69.5	86.5	67.8	7th	88.5	3, 14, 20	761	66	51	19th
June	77.4	30.049	81.1	69.0	85.8	67.0	12th	89.6	14th	782	71	51	7th
July	77.3	30.065	81.4	68.5	86.1	65.6	24th	88.5	25th	797	71	54	7th
August	77.5	30.013	82.3	68.3	86.7	66.5	4th	89.0	15th	784	70	57	19th
September	77.9	30.021	83.4	68.4	87.4	65.0	24th	89.2	13th	811	69	47	21st
October	77.6	29.971	82.9	68.0	87.2	64.5	21st	89.4	21st	791	69	53	31st
November	76.8	29.950	82.0	67.1	86.5	64.0	19, 20th	88.2	7th	784	70	58	14th
December	75.7	30.002	80.7	65.6	85.8	60.5	12th	87.4	2nd	700	64	40	3rd
Year	77.1	30.011	81.8	67.7	86.4	55.0	15th Jan.	89.6	14th June.	753	67	42	3rd April.

## No. XI.—continued.

at Netley and Foreign Stations in the Year 1892.

Long. 30° 20' E. Height of Barometer Cistern above Sea, 2,220 feet.

Mean Amount of Cloudiness.	Rainfall.			Weather.									Wind.									
	Total.	Max.	Day.	Number of Days of									Number of Observations under each Point per Month.									
				Rain.	Snow.	Hail.	Thunder Storm.	Fog.	Clear Sky.	Overcast.	Gales.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm.		
7.2	6.33	2.18	14th	20	—	—	11	—	—	9	—	—	4	2	15	7	6	1	—	3	24	
6.9	11.36	3.56	1st	14	—	1	8	—	4	10	—	—	3	1	20	5	5	3	—	—	21	
6.1	6.45	1.53	20th	13	—	—	7	1	6	12	—	—	3	8	13	2	4	—	1	—	28	
3.7	0.95	0.62	14th	5	—	—	3	—	12	4	—	—	4	6	10	1	3	1	1	—	34	
4.7	1.01	0.47	24th	8	—	—	4	1	9	8	—	—	2	3	15	1	4	3	2	1	31	
1.9	—	—	—	—	—	—	—	—	19	2	—	—	3	2	12	—	1	1	2	1	38	
2.0	0.59	0.33	30th	4	—	—	1	—	23	2	—	—	4	2	10	1	2	2	2	1	38	
3.4	2.75	1.34	10th	7	—	—	3	—	15	6	—	—	—	2	14	1	1	1	5	1	38	
6.5	6.75	2.40	18th	13	—	—	4	—	6	12	—	—	4	2	10	4	1	—	3	3	35	
7.2	6.38	1.50	24th	17	—	1	4	1	—	11	—	—	—	2	10	1	1	—	1	2	45	
5.5	6.60	1.33	12th	19	—	1	9	—	3	11	—	—	—	1	15	2	7	—	5	1	29	
5.5	5.23	1.50	27th	16	—	1	7	1	6	8	—	—	3	3	6	2	4	1	1	2	40	
4.9	54.40	3.56	1st Feb.	136	—	4	61	4	103	95	—	—	33	34	150	27	38	13	22	16	390	

Long. 13° 9' 17" W. Height of Barometer Cistern above Sea, 224 feet.

1.7	—	—	—	—	—	—	—	—	14	—	—	—	7	3	11	2	13	4	13	2	7
1.8	—	—	—	—	—	—	—	—	14	—	—	—	6	5	8	1	8	7	16	2	5
2.0	3.33	1.08	3rd	8	—	—	3	—	8	—	—	—	6	—	6	3	19	6	18	3	3
2.1	1.98	1.26	30th	8	—	—	1	—	5	—	—	—	6	—	7	3	16	3	19	1	5
2.4	18.81	4.80	26th	20	—	—	9	—	1	—	—	—	8	2	12	2	10	2	16	1	9
2.4	10.87	2.06	28th	22	—	—	6	—	1	—	—	—	6	1	11	3	13	2	18	1	5
2.5	24.34	3.51	19th	24	—	—	—	—	—	—	—	—	9	3	4	—	11	2	23	4	6
2.5	30.37	4.16	24th	29	—	—	1	—	—	—	—	—	10	—	7	1	10	4	18	3	9
2.6	48.05	9.70	2nd	27	—	—	12	—	—	—	—	—	8	2	6	2	16	5	11	2	3
2.7	20.91	6.08	10th	22	—	—	4	—	1	—	—	—	6	2	11	1	15	3	16	2	6
2.7	5.47	1.30	11th	12	—	—	6	—	2	—	—	—	7	—	10	3	12	2	11	4	11
2.2	1.40	1.00	31st	5	—	—	2	—	9	—	—	—	9	—	13	2	10	2	10	1	15
2.3	166.03	9.70	2nd Sept.	177	—	—	44	—	55	—	—	—	86	18	106	23	153	42	189	26	89

Long. 59° 40' 8" W. Height of Barometer Cistern above Sea, 30 feet 8 in.

4.1	2.53	0.66	2nd	11	—	—	—	—	2	—	—	—	34	18	1	—	—	—	—	—	9
5.0	0.96	0.47	13th	9	—	—	—	—	1	—	—	—	22	24	1	—	—	—	1	—	10
5.0	1.64	0.55	8th	17	—	—	—	—	—	—	—	—	32	14	1	—	—	—	—	—	15
5.7	2.33	1.58	29th	10	—	—	—	—	1	9	—	—	40	11	—	—	—	—	—	—	9
5.7	3.94	0.70	28th	20	—	—	—	—	—	6	—	—	30	3	—	—	—	—	—	—	29
6.8	9.35	1.67	11th	22	—	—	—	—	—	8	—	—	9	33	1	—	—	—	—	—	17
5.6	7.00	1.64	23rd	19	—	—	—	—	2	3	—	—	11	32	4	—	—	—	—	—	13
5.6	6.26	1.70	24th	20	—	—	2	—	2	6	—	—	1	38	13	—	3	—	—	2	5
5.6	6.24	1.84	23rd	19	—	—	1	—	2	7	—	—	—	52	6	—	—	—	—	—	2
4.9	7.61	1.51	3rd	18	—	—	—	—	—	1	—	—	—	21	27	3	1	—	—	—	10
4.8	6.04	1.71	9th	18	—	—	1	—	1	1	—	—	—	18	17	4	—	—	—	—	21
4.1	2.82	1.47	16th	14	—	—	—	—	2	—	—	—	—	51	6	—	—	—	—	—	5
5.2	56.73	1.84	23rd Sep.	197	—	—	4	—	13	41	—	—	1	358	204	15	4	—	1	2	142

## Annual Abstract of Meteorological Observations taken

UP PARK CAMP, JAMAICA.

Lat. 17° 59' N.

Month.	Mean daily Air Tem- perature.	Mean Pressure.	Air Temperature.								Tension of Vapour.	Relative Humidity.		
			Mean, 9 a.m.	Means of		Abs. Min.		Abs. Max.		Per Cent.		Min.		
				Min.	Max.	Temp.	Day.	Temp.	Day.					
January -	79° 6	29° 752	82° 8	67° 7	91° 5	63° 0	5, 16, 29	97° 0	11th	° 611	56	28	2nd	
February -	78° 0	29° 769	81° 5	66° 1	89° 9	61° 0	3rd	93° 0	13, 15th	° 582	52	27	19, 21	
March -	79° 1	29° 727	83° 6	67° 3	90° 9	62° 0	1st	95° 0	17th	° 631	58	46	10, 12	
April -	79° 2	29° 792	83° 9	67° 9	90° 6	65° 0	7, 13th	97° 0	14th	° 662	55	41	13, 21, 22nd	
May -	81° 2	29° 747	85° 6	70° 9	91° 5	63° 0	1, 7, 10th	97° 0	13th	° 707	57	42	14th	
June -	82° 0	29° 758	86° 3	72° 4	91° 6	69° 0	29th	97° 0	17th	° 700	56	41	30th	
July -	82° 7	29° 783	87° 7	71° 8	93° 6	70° 0	1, 2, 3, 28	99° 0	15th	° 701	52	36	31	
August -	82° 5	29° 746	88° 0	72° 0	93° 0	69° 5	10th	97° 5	23rd	° 700	56	40	13th	
September -	82° 0	29° 723	87° 1	71° 9	92° 1	70° 0	4, 22, 24, 26th	96° 0	17th	° 750	61	44	25th	
October -	81° 1	29° 696	84° 0	71° 6	90° 6	68° 5	17th	95° 0	9th	° 769	67	43	2d	
November -	80° 0	29° 713	83° 4	69° 0	91° 0	62° 5	30th	93° 5	8, 11, 12, 17, 18, 21	° 751	65	54	23rd	
December -	78° 2	29° 773	80° 3	66° 2	90° 2	62° 0	25th	92° 5	6, 14, 15, 17th	° 690	64	48	22, 25	
Year -	80° 5	29° 748	84° 5	69° 6	91° 3	61° 0	3rd Feb.	99° 0	13th July.	° 689	58	37	13th Feb.	

NEWCASTLE, JAMAICA.

Lat. 18° 0' 6" N.

January -	64° 5	28° 315	No instruments.	51° 0	78° 0	48° 0	3, 4, 15, 18, 31st	85° 0	22nd	No instruments.			
February -	63° 6	28° 310		48° 7	78° 5	45° 0	28th	83° 0	3, 8, 9, 11, 16th				
March -	65° 0	28° 387		51° 0	80° 0	49° 0	4th	86° 0	10th				
April -	65° 4	28° 315		51° 9	78° 0	48° 0	4th	83° 0	15th				
May -	67° 1	28° 325		54° 0	80° 2	51° 0	1st	95° 5	31st				
June -	67° 7	28° 325		56° 0	79° 4	53° 5	2nd	96° 1	20th				
July -	70° 3	28° 356		56° 8	83° 8	54° 0	2, 3, 5th	89° 2	13th				
August -	69° 1	28° 346		55° 6	82° 6	54° 0	4th	87° 2	1st				
September -	68° 7	28° 343		55° 8	81° 6	54° 5	25th	87° 2	12th				
October -	67° 1	28° 327		55° 0	79° 2	53° 2	18th	84° 5	9th				
November -	64° 3	28° 323		55° 2	73° 4	49° 1	30th	85° 0	2nd				
December -	61° 3	28° 330		52° 6	71° 0	50° 0	31st	78° 6	12th				
Year -	66° 2	28° 335	—	53° 6	78° 8	45° 0	28th Feb.	95° 5	31st May	—	—	—	—

St. LUCIA.

Lat. 14° 0' 13" N.

January -	76° 9	29° 238	75° 9	70° 2	83° 6	66° 8	15th	89° 2	5th	° 703	79	57	16th
February -	74° 5	29° 224	75° 5	69° 0	80° 0	64° 2	23rd	85° 6	27th	° 689	75	57	29th
March -	75° 9	29° 224	76° 5	69° 7	82° 1	67° 2	27th	86° 0	29th	° 663	73	58	31st
April -	76° 5	29° 292	77° 0	69° 9	83° 1	67° 4	28th	86° 4	21st	° 720	67	53	19th
May -	76° 7	29° 250	78° 4	70° 2	83° 2	69° 4	26th	85° 4	11th	° 763	73	60	29th
June -	76° 6	29° 275	77° 5	71° 6	81° 6	68° 0	30th	83° 6	15th	° 777	81	63	29th
July -	77° 4	29° 280	78° 6	72° 0	82° 8	66° 0	18th	84° 6	17th	° 756	76	60	16th
August -	78° 1	29° 215	79° 4	72° 1	84° 1	59° 6	14th	89° 2	16th	° 761	73	54	4 1/2
September -	78° 3	29° 241	79° 4	72° 3	84° 3	67° 8	24th	89° 2	8th	° 789	75	64	15 1/2
October -	78° 2	29° 244	79° 8	72° 4	84° 0	68° 4	10th	87° 2	19th	° 790	75	64	10th
November -	77° 0	29° 179	78° 3	71° 1	82° 9	68° 6	10th	85° 8	30th	° 756	77	65	19th
December -	75° 1	29° 221	76° 1	69° 9	80° 3	67° 8	11th	82° 6	2nd	° 692	76	56	10th
Year -	76° 8	29° 240	77° 7	70° 9	82° 7	59° 6	14th Aug.	89° 2	5 Jan. 16 Aug. 8 Sept.	° 736	75	53	19th May

## No. XI.—continued.

at Netley and Foreign Stations in the Year 1892.

Long. 76° 56' W. Height of Barometer Cistern above Sea, 245 feet.

Mean Amount of Cloudiness.	Rainfall.			Weather.								Wind.									
	Total.	Max.	Day.	Number of Days of								Number of Observations under each Point per Month.									
				Rain.	Snow.	Hail.	Thunder Storm.	Fog.	Clear Sky.	Overcast.	Gales.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm.	
2.0	1.58	0.40	9th	7	—	—	—	—	16	—	—	1	8	—	13	6	10	2	7	15	
1.5	1.83	0.85	25th	7	—	—	—	—	10	1	—	2	2	2	19	3	6	3	1	20	
1.9	0.13	0.10	22nd	3	—	—	—	—	25	—	—	—	2	—	18	8	4	1	3	26	
2.0	2.12	0.78	20th	6	—	—	—	—	21	—	—	—	—	2	8	8	5	1	1	35	
2.3	2.01	1.36	20th	8	—	—	—	—	10	—	—	—	2	5	14	8	9	—	—	24	
3.8	5.26	1.80	21st	10	—	—	2	—	9	3	—	2	4	6	36	2	—	—	—	10	
12.7	0.82	0.30	19th	7	—	—	—	—	11	2	—	2	—	3	28	2	—	6	1	20	
2.8	2.53	0.52	24th	16	—	—	—	—	6	—	—	2	1	2	24	3	—	4	—	26	
3.6	4.84	2.45	21st	22	—	—	—	—	7	2	—	11	—	—	24	3	1	1	—	20	
1.8	7.19	1.80	14th	26	—	—	6	—	7	—	—	—	8	—	15	6	3	2	—	28	
3.3	5.54	1.30	21st	13	—	—	1	—	4	—	—	—	16	1	25	—	2	—	1	15	
3.0	0.92	0.70	9th	6	—	—	1	—	8	—	—	—	20	—	19	2	9	—	9	3	
2.6	33.24	2.45	21st Sept.	131	—	—	10	—	114	8	—	20	63	21	243	51	40	20	23	232	

Long. 76° 0' 42" W. Height of Barometer Cistern above Sea, 3,800 feet.

4.3	4.96	1.25	27th	20	—	—	2	—	3	5	—	12	21	9	—	—	—	—	3	17
4.6	3.89	1.41	20th	11	—	—	—	—	—	5	—	38	2	—	—	—	—	—	1	17
5.3	1.32	0.30	10th	13	—	—	—	—	—	3	5	21	5	—	—	—	—	—	4	32
5.5	1.71	0.82	20th	11	—	—	—	—	3	7	—	22	1	—	—	—	—	—	4	33
7.2	15.77	6.95	20th	15	—	—	1	1	—	13	—	15	—	—	—	—	—	—	10	37
5.7	10.43	4.45	21st	15	—	—	4	—	7	10	—	2	14	9	—	—	—	—	4	31
3.9	2.46	0.75	19th	10	—	—	4	—	6	2	—	10	—	16	—	—	—	—	—	44
1.3	7.26	1.61	27th	18	—	—	—	—	4	2	—	6	4	6	—	—	—	—	—	46
1.8	15.15	3.43	21st	20	—	—	10	—	5	5	—	2	6	11	—	—	—	—	2	39
2.5	37.36	9.22	29th	28	—	—	10	—	2	14	—	1	6	11	1	—	—	—	—	43
4.1	24.32	9.82	21st	21	—	—	1	—	1	10	—	2	10	25	—	—	—	—	—	23
3.7	3.21	1.18	31st	10	—	—	1	—	6	4	—	4	3	14	—	—	—	—	—	41
4.2	127.89	9.82	21st Nov.	188	—	—	33	1	37	80	5	127	72	101	1	—	—	—	28	403

Long. 61° 0' 25" W. Height of Barometer Cistern above Sea, 790 feet.

5.3	7.31	3.10	3rd	18	—	—	—	—	1	—	—	1	20	32	5	—	—	—	—	4
5.12	2.67	0.90	12th	11	—	—	—	—	—	1	—	—	24	23	9	—	—	—	—	3
3.6	5.03	1.10	31st	17	—	—	—	—	—	2	—	—	24	35	3	—	—	—	—	—
5.0	4.02	1.10	2nd	17	—	—	—	—	—	6	—	—	19	37	4	—	—	—	—	—
5.0	14.89	1.84	8, 23	30	—	—	1	—	—	—	—	—	10	14	5	—	—	—	—	—
8.0	20.12	2.82	20th	29	—	—	4	—	—	8	—	—	12	33	13	—	—	—	—	2
5.0	11.15	2.10	20th	27	—	—	3	—	—	—	—	—	14	38	10	—	—	—	—	—
5.0	6.19	1.00	30th	26	—	—	2	—	—	—	—	—	20	24	12	—	—	—	—	0
5.0	13.13	2.12	22nd	25	—	—	7	—	—	—	—	—	12	31	15	—	—	—	—	2
5.0	10.65	1.91	29th	23	—	—	—	—	—	—	—	—	7	28	22	1	1	—	—	3
5.0	8.35	3.90	9th	22	—	—	1	—	—	4	1	—	18	24	15	—	—	—	—	3
4.0	6.16	1.42	26th	25	—	—	—	—	—	2	—	—	22	35	5	—	—	—	—	—
5.1	109.67	3.90	9th Nov.	270	—	—	18	—	1	17	7	1	202	363	118	1	1	—	—	23

\* Only 29 observations taken.



## Appendix

## Annual Abstract of Meteorological Observations taken

BERMUDA.

Lat. 32° 17' 40" N.

Month.	Mean Daily Air Tem- perature.	Mean Pressure cor- rected and reduced to 32° F.	Air Temperature.								Tension of Vapour.	Relative Humidity.		
			Mean, 9 a.m.	Means of		Abs. Min.		Abs. Max.		Per Cent.		Min.		
				Min.	Max.	Temp.	Day.	Temp.	Day.			Mean.	Per Cent.	Day.
January -	62.5	29.927	63.3	58.3	66.7	46.8	28th	71.5	21st	.449	75	58	25th	
February	59.0	29.820	60.3	54.0	64.0	44.6	13th	70.0	9th	.361	74	60	4th	
March -	61.4	29.865	62.8	56.8	66.0	50.3	29th	71.5	9th	.428	73	56	30th	
April -	62.9	29.997	65.2	57.5	68.3	51.0	2nd	76.5	25th	.440	71	53	11th	
May -	68.3	30.009	70.2	62.6	74.0	56.4	11th	81.9	23rd	.552	72	43	24th	
June -	74.5	30.090	76.4	68.7	80.3	62.8	3rd	84.7	28th	.711	76	51	6, 7th	
July -	78.8	30.064	80.2	72.9	84.7	70.0	1, 9th	87.6	31st	.808	76	62	6th	
August -	79.9	29.944	80.8	73.6	86.2	69.4	17th	91.3	13th	.808	75	62	13th	
September	77.6	29.972	78.0	72.3	82.9	68.4	12th	86.9	10th	.726	74	55	22nd	
October -	70.8	29.825	72.3	66.4	75.4	62.8	30th	81.1	9th	.610	77	52	3rd	
November	67.2	29.932	67.7	62.8	71.7	55.0	27th	77.9	12th	.496	73	48	14th	
December	62.6	29.867	63.3	58.0	67.2	48.3	5th	78.7	20th	.429	73	56	31st	
Year -	68.8	29.942	70.1	63.7	74.0	44.6	13th Feb.	91.3	13th Aug.	.571	74	43	24th May	

FORT CANNING, SINGAPORE.

Lat. 1° 16' N.

January -	79.5	29.706	81.7	72.4	86.6	69.2	23rd	90.2	3, 13th	.836	76	64	31st
February	80.9	29.716	82.2	73.5	88.3	71.0	2nd	92.2	3, 8, 26th	.832	75	52	18th
March -	81.5	29.675	82.6	73.6	89.4	71.0	23rd	92.2	19th	.829	72	43	8th
April -	80.8	29.700	81.4	74.1	87.5	70.8	7th	92.0	8th	.847	75	53	14th
May -	81.4	29.718	83.3	74.0	88.8	59.3	22nd	93.0	13th	.878	75	59	6, 14th
June -	82.4	29.690	84.3	74.8	90.0	69.0	10th	92.9	8th	.883	71	56	23rd
July -	79.6	29.714	83.3	75.3	83.9	69.8	21, 22, 23	89.8	2nd	.874	69	50	12th
August -	76.7	29.721	80.1	73.2	80.2	68.5	10th	85.0	4th	.842	78	55	22nd
September	*	29.730	82.5	77.0	*	70.2	22nd	*	*	.800	68	42	11th
October -	†	29.709	82.7	73.8	88.6	71.5	15, 27th	90.2	28th	.826	69	50	3rd
November	80.1	29.707	81.1	72.8	87.4	70.8	9th	92.0	18th	.777	73	46	11th
December	79.0	29.745	78.8	71.8	86.2	69.0	18, 25th	91.8	7th	.788	75	51	5th
Year -		29.716	82.0	73.9		69.3	22nd May			.834	73	42	11th Sept.

\* Maximum Thermometer not reliable.

† Maximum Temperature only taken on nine days.

No. XI.—*continued.*

at Netley and Foreign Stations in the Year 1892.

Long. 64° 47' W. Height of Barometer Cistern above Sea, 151 feet.

Mean Amount of Cloudiness.	Rainfall.			Weather.									Wind.									
	Total.	Max.	Day.	Number of Days of									No of Observations under each Point per Month.									
				Rain.	Snow.	Hail.	Thunder Storm.	Fog.	Clear Sky.	Overcast.	Gales.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm.		
5.5	4.20	1.06	30th	17	—	1	3	—	4	5	—	10	7	6	2	6	17	5	7	2		
6.3	5.78	2.39	11th	18	—	2	1	—	1	8	—	7	8	3	2	1	11	7	16	3		
5.8	4.85	1.60	2nd	19	—	1	1	—	—	7	—	7	1	2	2	7	20	11	11	1		
5.2	2.35	0.61	8th	11	—	—	—	—	—	2	1	11	4	—	2	9	16	6	10	2		
5.0	0.95	0.63	24th	5	—	—	—	—	3	6	—	11	6	1	5	8	13	5	6	7		
5.5	4.11	2.91	12th	7	—	—	—	—	—	6	—	4	7	2	13	11	17	2	1	3		
5.3	4.96	1.13	12th	11	—	—	1	—	2	4	—	—	—	—	7	7	24	8	9	7		
4.7	6.56	2.25	17th	14	—	—	1	—	3	4	—	2	3	5	9	3	22	3	3	12		
4.1	4.21	1.49	27th	8	—	—	1	—	4	2	—	2	13	12	5	4	15	—	3	6		
5.1	17.73	5.70	13th	13	—	—	—	—	4	10	—	5	17	5	—	—	15	2	8	10		
5.5	7.48	1.76	11th	14	—	—	1	—	1	6	—	1	10	7	11	—	15	—	9	7		
4.8	3.17	0.66	27th	14	—	—	—	—	—	3	—	4	9	—	—	—	12	5	16	16		
5.2	66.25	5.70	13th Oct.	151	—	4	9	—	22	63	1	64	85	43	53	56	197	54	99	76		

Long. 103° 53' E. Height of Barometer Cistern above Sea, 110 feet.

4.1	8.05	1.26	4th	14	—	—	—	—	6	2	—	30	6	—	—	—	—	4	22	—
6.0	5.03	1.90	13th	12	—	—	1	—	3	6	—	10	14	—	2	1	—	12	19	—
6.6	7.32	2.55	29th	18	—	—	5	—	1	9	—	5	4	—	—	—	9	6	38	—
7.5	6.14	1.01	21st	23	—	—	3	—	—	14	—	—	—	—	—	2	10	9	39	—
6.0	12.09	5.40	29th	13	—	—	1	—	—	5	—	1	—	—	—	3	38	8	12	—
5.3	2.96	1.07	4th	10	—	—	—	—	—	5	—	—	2	—	1	1	43	12	1	—
6.0	5.76	1.18	24th	13	—	—	3	—	1	4	—	1	7	—	2	9	28	1	13	1
7.5	7.96	1.90	10th	17	—	—	1	—	—	18	—	1	2	1	5	5	35	7	6	—
6.0	4.72	2.30	22nd	13	—	—	2	—	—	7	—	—	1	—	4	9	30	11	5	—
6.5	6.81	1.60	17th	15	—	—	3	—	—	5	—	—	6	1	2	4	36	4	9	—
6.5	9.32	1.82	23rd	18	—	—	11	—	—	8	—	5	2	—	—	4	11	14	24	—
8.0	25.75	9.00	14th	17	—	—	3	—	—	15	—	6	26	2	2	—	6	7	13	—
6.3	102.51	9.00	14th Dec.	183	—	—	33	—	11	96	—	59	70	4	18	38	246	95	201	1

## Appendix

## Annual Abstract of Meteorological Observations taken

HONG KONG.

Lat. 22° 16' 20" N.

Month.	Mean Daily Air Temperature.	Mean Pressure.	Air Temperature.								Tension of Vapour.	Relative Humidity.		
			Mean, 9 a.m.	Means of		Abs. Min.		Abs. Max.		Per Cent.		Minimum.		
				Min.	Max.	Temp.	Day.	Temp.	Day.			Mean.	Per Cent.	Day.
January -	62°4	30°162	61°4	56°3	68°5	40°0	8, 9, 22	79°0	31st	°407	69	46	12th	
February -	63°3	30°004	63°3	59°0	67°6	51°0	16, 17th	80°0	4th	°485	81	50	4th	
March -	63°0	29°985	62°4	58°8	67°2	48°0	15th	80°0	26th	°489	82	64	6th	
April -	73°4	29°923	72°7	68°0	78°8	59°0	2nd	87°0	30th	°633	79	48	2nd	
May -	77°9	29°829	78°2	73°5	82°3	66°0	3rd	91°0	31st	°775	78	56	19th	
June -	82°6	29°713	83°3	77°9	87°3	71°0	7, 29th	93°0	4th	°904	79	65	2, 4th	
July -	84°0	29°705	84°3	79°0	89°0	76°5	12th	92°5	17th	°901	79	65	22, 23	
August -	83°5	29°785	83°7	78°8	88°2	75°0	10, 21st	93°0	16th	°885	75	56	11th	
September	81°3	29°718	81°4	76°1	86°5	68°5	30th	94°5	17th	°773	72	52	6, 7th	
October -	77°6	29°961	78°6	71°3	83°9	62°5	31st	90°5	8th	°596	60	42	29, 30	
November	72°4	30°021	72°4	66°8	78°0	53°0	28th	86°0	10, 23rd	°583	70	51	5th	
December	61°0	30°187	60°5	54°4	67°6	44°0	14th	75°5	23rd	°358	63	41	28th	
Year -	73°5	29°916	73°5	68°3	78°7	44°0	14th Dec.	94°5	17 Sept.	°657	74	41	25th Dec.	

## SANITARIUM, HONG KONG.

Lat. 22° 16' 20" N.

January -	No instruments.	66°1	81°9	60°0	6, 20th	88°0	3rd	No instruments.
February -								
March -								
April -								
May -								
June -								
July -								
August -								
September								
October -								
November								
† December	54°1	46°5	61°7	37°0	13th	68°0	2nd	

\* Figures doubtful.

† Observations recorded for 14 days only.

No. XI.—continued.

at Netley and Foreign Stations in the Year 1892.

Long. 114° 8' 16" E. Height of Barometer Cistern above Sea, 18 feet.

Mean Amount of Cloudiness.	Rainfall.			Weather.									Wind.								
	Total.	Max.	Day.	Number of Days of									Number of Observations under each Point per Month.								
				Rain.	Snow.	Hail.	Thunder Storm.	Fog.	Clear Sky.	Overcast.	Gales.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm.	
3.9	0.44	0.21	28th	3	—	—	—	—	14	5	—	2	26	5	—	—	2	—	5	22	
7.7	1.62	0.70	19th	5	—	—	—	—	4	20	—	3	25	8	—	1	1	1	5	14	
8.2	3.78	1.70	28th	5	—	—	—	—	—	20	—	4	30	12	2	2	—	2	2	8	
7.5	12.15	5.00	20th	12	—	—	4	—	3	14	—	—	28	14	4	2	—	—	4	8	
7.0	9.01	2.75	9th	11	—	—	2	—	3	16	—	—	18	13	4	7	3	2	1	14	
5.6	36.65	10.50	15th	15	—	—	2	—	4	8	—	—	16	5	2	5	15	11	2	4	
5.8	9.69	2.00	11th	16	—	—	—	—	2	9	—	3	15	3	9	15	3	1	1	12	
5.4	14.45	1.85	2nd	19	—	—	—	—	8	10	—	1	8	7	2	6	15	3	7	13	
5.4	6.63	1.40	20th	14	—	—	—	—	7	11	—	8	13	5	3	1	3	6	4	17	
2.2	—	—	—	—	—	—	—	—	15	1	—	9	24	18	—	—	—	2	4	5	
4.5	0.25	0.25	13th	1	—	—	—	—	7	6	—	9	21	15	—	—	2	1	4	8	
4.0	0.53	0.25	10th	4	—	—	—	—	14	8	—	8	16	9	—	—	1	5	6	17	
5.6	95.20	10.50	15th June.	105	—	—	8	—	81	128	—	47	240	114	26	39	45	34	45	142	

Long. 114° 9' 16" E. Height of Barometer Cistern above Sea, 911 feet.

8.2	30.89	7.40	15th	18	—	—	1	5	—	18	—	—	10	—	4	18	16	—	4	8
7.9	7.26	1.83	11th	15	—	—	2	7	—	—	—	—	5	3	14	7	9	—	—	24
—	11.16	1.90	31st	17	—	—	3	2	2	5	—	1	3	7	17	15	13	3	1	2
4.6	6.60	1.20	18th	15	—	—	—	—	15	9	—	8	23	5	7	9	2	—	1	5
1.1	—	—	—	—	—	—	—	—	24	1	—	10	18	9	1	—	—	—	—	24
2.3	0.24	0.16	13th	3	—	—	—	—	15	2	—	6	15	6	1	—	—	—	—	32
6.0	0.65	0.30	11th	6	—	—	—	—	3	3	—	8	12	—	—	—	—	—	—	8

## Appendix

## Summary of Results of Meteorological Observations

Stations.	Altitude, above Sea level.	Latitude.	Longitude.	Mean Daily Air Temp.	Air Pressure corrected and reduced to 32° F.	Air Temperature.						Tension of Vapour.	Relative Humidity.			
						Mean, 9 a.m.	Means of		Abs. Min.	Abs. Max.			Per Cent.	Min.		
							Min.	Max.		Temp.	Date.				Temp.	Date.
Mediterranean: Gibraltar -	ft. 53	° 36 6 20 N.	° 5 20 53 W.	64.5	29.971	63.4	58.9	69.6	43.4	30 Dec.	91.0	31 July	.451	72	38	11 July
Malta -	70	35 53 49 N.	14 30 54 E.	68.6	29.880	67.3	62.9	74.3	47.0	5 Feb.	96.0	22 Aug.	.507	72	32	1 Aug.
Centuri -	60	41 0 0 N.	29 3 0 E.	60.2	29.871	59.9	51.1	69.2	24.0	3 Jan.	100.2	3 Aug.	.395	68	30	3 Aug.
Cyprus: Polymedia	460	34 40 0 N.	32 2 0 E.													
Troodos -	5,720	34 55 0 N.	32 53 0 E.													
atal, Fort Napier.	2,220	29 3 0 S.	30 2 0 E.	66.3	27.555	67.3	53.7	78.8	30.7	17 July	101.2	14 Dec.	.457	62	16	9 Aug.
orra Leone -	224	8 29 30 N.	13 9 17 W.	80.4	29.814	81.4	70.5	90.2	64.0	1 June	96.0	20 April	.874	80	34	29 Jan.
est Indies: Barbados -	303	13 7 39 N.	59 40 8 W.	77.1	30.011	81.8	67.7	86.4	55.0	15 Jan.	89.6	14 June	.753	67	42	5 April
maica: Park Camp.	245	17 59 0 N.	76 56 0 W.	80.5	29.748	84.5	69.6	91.3	61.0	3 Feb.	99.0	13 July	.689	58	37	15 Feb.
Newcastle -	3,800	18 0 6 N.	76 0 42 W.	66.2	26.335	—	53.6	78.8	45.0	28 Feb.	95.5	31 May	—	—	—	—
Lucia -	790	14 0 13 N.	61 0 25 W.	76.8	29.240	77.7	70.9	82.7	59.6	14 Aug.	89.2	5 Jan.	.736	75	53	19 May
rmuda -	151	32 17 40 N.	64 47 0 W.	68.8	29.942	70.1	63.7	74.0	44.6	13 Feb.	91.3	16 Aug.	.571	74	43	24 May
apapore: Fort Canning	110	1 16 0 N.	103 53 0 E.		29.716	82.0	73.9		59.3	22 May		8 Sept.	.834	73	42	11 Sept.
Hong Kong -	18	22 16 20 N.	114 8 16 E.	73.5	29.916	73.5	68.3	78.7	44.0	14 Dec.	94.5	17 Sept.	.657	74	41	28 Dec.
Sanitarium -	911	22 16 20 N.	114 9 16 E.													

No. XI.—*continued.*

taken at Foreign Stations in the Year 1892.

Mean Amount of Cloudiness.	Rainfall.			Weather.								Wind.										Remarks. No. of Months in which Observations were taken.
	Total.	Max.	Date.	Number of Days of								Means of Observations under each Point per Month.								Calm.		
				Rain.	Snow.	Hail.	Thunder- storm.	Fog.	Clear Sky.	Overcast.	Gales.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.			
4.9	46.00	2.43	7 Mar.	123	—	2	15	—	96	79	13	4	36	272	9	1	60	223	55	—	12 months.	
4.4	25.13	2.28	11 Nov.	103	—	3	14	1	112	62	—	15	39	33	51	14	32	56	81	411	12	"
5.2	31.87	2.85	9 Dec.	135	11	4	23	10	91	109	—	101	249	81	16	94	104	16	14	57	12	"
																					8	"
																					4	"
4.9	54.40	3.56	1 Feb.	136	—	4	61	4	103	95	—	33	34	150	27	38	13	22	16	389	12	"
2.3	166.03	9.70	2 Sept.	177	—	—	44	—	55	—	—	86	18	106	23	153	42	189	26	89	12	"
5.2	56.72	1.84	23 Sept.	197	—	—	4	—	13	41	—	1	358	204	15	4	—	1	2	147	12	"
2.6	33.24	2.45	21 Sept.	131	—	—	10	—	114	8	—	20	63	21	243	51	40	20	23	232	12	"
4.2	127.89	9.82	21 Nov.	188	—	—	33	1	37	80	—	127	72	101	1	—	—	—	28	403	12	"
5.1	109.67	3.90	9 Nov.	270	—	—	18	—	1	17	7	1	202	353	118	1	1	—	—	23	12	"
5.2	66.25	5.70	13 Oct.	151	—	4	9	—	22	63	—	64	85	43	58	56	197	54	99	76	12	"
6.3	102.51	9.00	14 Dec.	183	—	—	33	—	11	96	—	59	70	4	18	38	246	95	201	1	12	"
5.6	95.20	10.50	15 June	105	—	—	8	—	81	128	—	47	240	114	26	39	45	34	45	142	12	"
																					6	"

## APPENDIX

## Annual Abstract of Meteorological Observations taken

NETLEY.

Lat. 50° 51' N.

Month.	Mean daily Air Tem- perature.	Mean Pressure.	Air Temperature.								Tension of Vapour.	Relative Humidity.		
			Mean 9 a.m.	Means of		Abs. Min.		Abs. Max.		Per cent.		Min.		
				Min.	Max.	Temp.	Day.	Temp.	Day.			an. Mc	Per cent.	Day.
January	35.5	29.950	36.2	29.8	41.2	14.8	5th	52.4	23rd	202	92	67	20th	
February	42.7	29.617	42.8	35.8	40.6	24.8	6th	57.8	19th	267	93	69	25th	
March	46.2	30.041	49.0	33.7	58.7	20.8	19th	66.8	25, 30th	281	81	56	29th	
April	53.3	29.995	57.6	37.7	68.9	24.8	14th	82.0	25th	325	69	37	21st	
May	58.8	29.939	61.3	46.6	71.0	36.0	31st	79.4	15th	352	66	43	8, 13th	
June	62.9	29.889	66.0	51.2	74.6	36.0	1st	93.0	19th	399	67	30	19th	
July	64.4	29.787	65.5	55.6	73.2	47.6	1st	83.2	2nd	459	72	49	6th	
August	65.9	29.934	67.5	55.9	75.9	44.3	29th	88.7	16th	487	70	40	18th	
September	59.1	29.784	59.9	48.8	69.4	37.2	24th	80.5	6th	388	72	44	14th	
October	53.1	29.834	53.2	44.0	62.2	29.0	31st	67.2	1st	338	82	44	11th	
November	43.0	29.876	42.6	36.4	49.8	25.3	1st	62.5	1st	242	83	62	23rd	
December	43.0	29.851	40.9	34.8	51.4	20.0	3rd	69.0	15th	231	85	51	3rd	
Year	52.3	29.876	53.5	42.5	62.2	14.8	5th Jan.	93.0	19th June	331	78	30	19th June	

GIBRALTAR.

Lat. 36° 6' 20" N.

January	55.2	30.025	51.0	48.4	62.0	41.0	16th	68.0	27th	307	76	48	19th	
February	58.5	30.163	55.1	52.4	64.6	48.0	17th	72.4	28th	340	73	57	7, 17th	
March	60.8	29.958	58.9	56.4	65.2	51.4	4th	75.0	4th	393	77	51	2, 4th	
April	63.3	29.953	63.2	58.5	68.1	51.2	13th	77.6	21st	416	71	54	12th	
May	67.9	29.981	67.3	62.1	73.7	56.4	10, 22nd	79.0	30th	464	65	38	24th	
June	72.4	29.993	72.0	65.6	79.2	59.2	4th	88.0	12th	533	63	47	26th	
July	75.2	29.955	75.0	69.2	81.2	65.4	30th	88.4	5th	638	70	39	8th	
August	78.3	29.975	78.1	73.3	83.3	69.6	12th	90.0	15th	688	68	35	15th	
September	73.0	29.950	72.2	66.4	79.6	59.0	26th	86.4	8th	558	65	50	11th	
October	66.9	30.051	65.1	61.3	72.5	56.4	9th	80.0	5th	476	73	43	19th	
November	60.6	29.998	57.8	54.7	66.5	42.0	25th	76.8	14th	394	74	40	24th	
December	57.0	30.081	54.2	50.6	63.4	42.0	8th	70.6	8, 18th	329	73	57	22nd	
Year	65.8	30.174	64.2	59.9	71.6	41.0	16th Jan.	90.0	15th Aug.	461	71	35	15th Aug.	

MALTA.

Lat. 35° 53' 49" N.

January	53.3	29.694	52.7	48.9	57.7	42.0	5th	65.0	11th	315	77	56	23rd	
February	55.8	30.123	56.1	51.8	59.8	42.0	6th	68.0	26th	343	72	52	13th	
March	57.9	29.924	57.4	53.3	60.5	48.0	22nd	66.2	19th	339	71	46	21st	
April	60.3	29.879	61.4	56.0	64.6	52.4	13th	74.0	29th	386	68	50	20th	
May	68.2	29.845	67.5	62.5	71.7	58.2	4th	76.2	30th	494	69	52	25th	
June	72.9	29.854	73.7	68.0	77.8	64.0	10th	85.2	30th	580	66	46	12th	
July	79.0	29.824	79.5	74.3	83.7	71.0	20th	91.4	14th	685	65	43	6th	
August	79.1	29.880	83.6	74.2	84.0	71.0	11th	91.6	31st	691	64	41	25th	
September	80.1	29.879	80.9	75.2	85.0	70.8	30th	96.0	19th	724	64	31	20th	
October	72.7	29.917	74.0	68.4	77.0	59.0	21st	88.0	2nd	602	69	49	15th	
November	67.3	30.167	68.8	63.3	71.3	59.0	20, 30th	78.2	1st	513	72	49	25th	
December	59.7	29.815	62.2	56.1	63.3	43.2	30th	69.2	5th	373	70	41	30th	
Year	67.2	29.900	68.1	62.7	71.4	42.0	5th Jan. 6th Feb.	96.0	19th Sept.	504	69	31	20th Sept.	

## No. XII.

at Netley and Foreign Stations in the Year 1893.

Long. 1° 20' W. Height of Barometer Cistern above Sea, 47 feet.

Mean Amount of Cloudiness.	Rainfall.			Weather.								Wind.									
	Total.	Max.	Day.	Number of days of								Number of Observations under each Point per Month.									
				Rain.	Snow.	Hail.	Thunder Storm.	Fog.	Clear Sky.	Overcast.	Gales.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm.	
8.6 1.84	0.57	9th	23	6	—	—	—	—	—	20	—	3	11	6	1	4	7	12	14	4	
7.8 3.55	0.50	20th	23	2	—	—	—	—	—	13	6	2	5	6	6	20	—	15	—	2	
4.6 0.44	0.16	3rd	6	—	—	—	—	1	8	6	3	2	4	6	11	5	13	7	8	6	
3.8 0.06	0.03	16th	2	—	—	—	—	—	9	—	—	6	22	6	9	7	6	—	—	—	
5.3 0.81	0.47	18th	6	—	—	—	1	—	2	—	—	2	9	3	12	5	15	7	9	—	
5.4 1.31	0.35	27th	9	—	—	—	—	—	3	4	—	3	11	5	8	10	16	7	—	—	
7.2 3.91	0.88	15th	14	—	—	—	2	—	—	12	—	3	2	3	6	10	20	7	11	—	
5.5 1.58	0.56	4th	11	—	—	—	1	—	2	3	1	4	4	4	9	8	18	6	9	—	
5.9 1.50	0.32	28th	15	—	—	—	1	1	2	6	2	3	6	2	1	1	24	11	12	—	
6.1 3.85	0.56	5th	18	—	—	—	3	—	2	8	—	5	4	3	1	3	34	5	6	3	
7.8 2.37	0.34	16th	14	1	—	—	—	1	1	17	5	16	12	2	3	—	14	5	8	—	
6.9 2.71	0.52	19th	16	—	—	1	—	1	3	17	5	4	4	2	2	9	22	9	8	2	
6.3 23.93	.88	15th July	157	9	1	8	4	32	107	22	53	94	48	69	82	189	89	89	17	—	

Long. 5° 20' 53" W. Height of Barometer Cistern above Sea, 53 feet.

4.5	3.30	1.20	8th	9	—	—	1	—	9	5	1	—	2	23	1	—	—	30	6	—
5.0	1.32	0.68	24th	9	—	—	—	—	6	5	3	—	—	16	2	—	—	34	4	—
7.5	5.64	2.28	21st	15	—	—	1	—	5	16	—	—	3	46	2	5	6	—	—	
7.0	2.85	0.91	4th	9	—	—	1	—	2	12	1	—	1	35	1	—	1	21	1	—
4.5	0.61	0.33	12th	5	—	—	—	—	6	4	—	—	4	26	—	—	1	30	1	—
3.0	0.66	0.31	22nd	5	—	—	1	—	11	2	—	—	4	26	—	—	—	28	2	—
2.5	—	—	—	—	—	—	—	—	15	—	1	—	2	35	—	1	—	24	—	—
3.5	0.02	0.02	2nd	1	—	—	1	—	11	3	—	—	5	43	—	—	—	14	—	—
4.5	1.52	0.65	23rd	9	—	—	—	—	7	5	—	—	—	22	2	—	2	34	—	—
5.5	1.09	0.40	7th	6	—	—	—	1	5	—	—	—	1	40	—	—	—	13	8	—
5.5	6.96	1.45	29th	16	—	—	—	—	8	8	2	—	—	22	—	—	—	37	1	—
5.5	2.29	1.10	2nd	12	—	—	—	—	7	7	—	—	1	26	—	—	—	33	2	—
4.9	26.26	2.28	21st Mar.	96	—	—	5	1	92	67	8	—	23	360	8	—	10	304	25	—

Long. 14° 30' 54" E. Height of Barometer Cistern above Sea, 112 feet.

7.5 6.53	0.88	24th	24	—	1	2	—	—	1	12	—	—	1	—	—	—	—	5	4	54
6.0 1.42	0.53	6th	7	—	—	—	—	—	3	1	—	—	3	—	—	—	—	4	—	49
5.0 1.45	0.72	3rd	7	—	—	1	—	—	6	2	—	1	2	2	5	—	—	—	2	50
4.5 0.34	0.30	5th	4	—	—	—	—	—	11	2	—	—	2	3	3	—	—	1	2	49
4.0 0.15	0.14	23rd	2	—	—	—	—	—	9	2	—	—	2	3	5	—	1	3	4	44
2.8 0.11	0.08	10th	2	—	—	1	—	—	15	3	—	1	2	1	3	1	—	6	9	57
1.6 0.25	0.25	29th	1	—	—	—	—	—	21	—	—	—	—	—	4	2	3	2	10	40
2.6 0.11	0.07	18th	3	—	—	—	—	—	13	—	—	2	3	2	8	—	1	2	8	36
2.8 —	—	—	—	—	—	—	—	—	11	—	—	—	—	3	5	—	2	2	6	42
4.1 2.72	1.45	20th	6	—	—	3	—	—	10	3	—	4	9	—	2	—	—	1	4	42
6.7 3.61	2.44	13th	11	—	—	4	—	—	—	5	—	—	3	3	7	—	2	5	4	36
6.0 6.91	1.64	7th	15	—	—	3	—	—	—	6	—	—	10	—	—	—	2	1	5	44
4.5 23.60	2.44	13th Nov.	82	—	1	14	—	100	36	—	9	37	17	42	3	11	32	56	523	—



## Appendix

## Annual Abstract of Meteorological Observations taken

## SCUTARI CEMETERY.

Lat. 41° 0' N.

Month.	Mean Daily Air Tem- perature.	Mean Pressure.	Air Temperature.								Tension of Vapour.	Relative Humidity.		
			Mean 9 a.m.	Means of		Abs. Min.		Abs. Max.		Per Cent.		Minimum.		
				Min.	Max.	Temp.	Day.	Temp.	Day.			Per Cent.	Day.	
January -	36.6	29.814	35.9	31.0	42.2	16.4	27th	63.2	4th	181	83	63	17th	
February -	40.3	29.935	38.9	32.6	48.0	14.8	7th	61.0	25th	197	78	54	23th	
March -	43.7	29.901	42.8	36.2	51.2	28.8	24th	63.8	1st	214	73	51	24th	
April -	48.1	29.819	48.3	39.2	57.0	30.0	10th	74.0	30th	248	66	46	28th	
May -	59.7	29.840	58.9	49.9	69.5	42.4	11th	82.0	29th	330	71	46	20th	
June -	70.4	29.779	70.3	58.7	82.1	51.6	1st	96.0	3rd	503	62	33	3rd	
July -	75.4	29.761	75.9	63.6	87.2	58.2	10th	98.6	16th	671	59	36	13th	
August -	76.0	29.818	75.8	64.4	87.6	58.4	31st	92.4	25, 23th	584	57	37	6th	
September -	69.4	29.870	68.7	59.5	79.3	52.6	15th	91.4	1st	467	63	39	6th	
October -	63.7	29.962	62.8	55.1	72.3	42.2	26th	84.6	6th	432	70	50	6th	
November -	57.0	29.941	56.4	50.3	63.7	39.2	30th	73.2	8th	376	77	58	18, 25	
December -	46.5	30.009	45.7	41.3	51.7	31.2	29th	62.8	1st	263	80	52	22nd	
Year -	57.2	29.878	56.7	48.5	66.0	14.8	7th Feb.	98.6	16th July	330	71	33	3rd June	

## POLYMEDIA, CYPRUS.

Lat. 34° 40' N.

January	54.2	29.390	53.6	45.5	62.9	33.2	29th	73.7	4th	306	69	46
February	55.4	29.572	56.3	44.9	65.9	37.0	3rd	72.3	17th	303	64	46
March	56.0	29.437	57.8	45.4	66.6	36.0	25th	75.5	1st	293	59	43
April	61.0	29.479	64.9	49.4	72.6	42.6	11th	90.1	30th	356	58	34
May	71.3	29.424	75.1	58.9	83.7	52.8	18th	96.4	26th	440	49	27
June												1, 25
July												
August												
September												
October												
November	69.9	29.612	72.2	57.5	82.3	50.2	30th	87.9	11th	450	57	42
December	59.3	29.468	60.1	48.9	69.7	38.4	21st	83.1	3rd	312	58	43

## MOUNT TROODOS.

Lat. 34° 55' N.

January												
February												
March												
April												
May												
June												
July	67.5	24.290	67.9	55.5	79.5	44.0	20th	85.1	20th	247	38	27
August	73.7	24.220	74.6	60.9	86.5	53.8	4, 5, 12	87.4	16th	297	37	24
September	70.3	24.220	70.6	57.6	83.0	47.4	26th	81.3	3rd	334	43	30
October	63.8	24.200	63.7	52.9	74.7	44.0	17th	83.9	2nd	289	52	36
November	59.4	24.220	61.7	49.6	69.2	41.8	13th	79.3	6th	283	58	37
December												29th

\* Aneroid.

No. XII.—*continued.*

at Netley and Foreign Stations in the Year 1893.

Long. 29° 3' E. Height of Barometer Cistern above Sea, 60 feet.

Mean Amount of Cloudiness.	Rainfall.			Weather.									Wind.									
	Total.	Max.	Day.	Number of Days of									Number of Observations under each Point per Month.									
				Rain.	Snow.	Hail.	Thunder Storms.	Fog.	Clear Sky.	Overcast.	Gales.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm.		
7.7	7.73	1.73	12th	23	14	—	—	—	1	18	—	19	16	6	4	5	2	—	5	5		
5.1	3.08	0.47	10th	12	3	1	—	4	8	9	—	4	11	5	4	11	10	4	—	7		
6.2	1.29	0.48	18th	13	4	3	—	1	4	11	—	9	23	3	1	7	13	3	3	—		
6.2	1.74	0.76	15th	11	2	1	—	5	11	—	—	7	28	6	—	8	7	—	2	2		
5.3	2.48	1.42	14th	8	—	—	2	1	5	5	—	5	26	1	—	11	13	—	2	4		
2.9	1.03	0.65	14th	6	—	—	7	1	14	1	—	2	16	3	1	7	27	—	—	4		
2.7	0.07	0.06	8th	2	—	1	—	—	13	1	—	3	32	3	—	3	11	—	—	10		
3.4	0.41	0.25	7th	5	—	—	2	1	9	2	—	5	38	4	—	4	10	—	—	1		
4.2	1.68	0.38	15th	13	—	—	2	2	7	2	—	6	25	5	3	3	10	1	2	5		
5.0	1.18	0.67	12th	8	—	—	2	3	9	6	—	2	30	5	—	5	11	—	1	8		
5.9	4.62	1.53	26th	13	—	—	3	1	3	8	—	4	11	7	4	9	16	—	1	8		
6.7	3.69	0.70	29th	18	4	—	—	—	3	15	—	12	26	7	4	3	2	—	—	8		
5.1	28.00	1.73	12th Jan.	132	27	6	19	14	81	89	—	78	282	55	21	76	132	8	16	62		

Long. 32° 2' E. Height of Barometer Cistern above Sea, 460 feet.

5.0	7.11	1.38	24th	21	—	1	10	—	7	5	—	—	—	—	2	14	8	32	2	4
4.0	3.09	1.05	7th	15	—	1	3	—	2	—	—	—	—	6	2	5	30	5	3	3
4.8	3.39	0.78	10th	11	—	1	3	—	5	4	—	1	—	5	3	4	8	20	16	5
4.3	2.14	1.05	20th	9	—	1	2	—	7	8	—	1	2	3	—	7	13	25	6	3
3.3	0.61	0.37	19th	5	—	—	3	—	13	2	—	—	2	—	1	2	30	19	—	8
3.8	0.49	0.36	14th	2	—	—	—	—	5	2	—	6	6	10	7	7	9	8	5	2
5.3	8.39	2.90	28th	14	—	1	10	—	4	6	—	6	7	11	13	1	2	10	12	—

Long. 32° 53' E. Height of Barometer Cistern above Sea, 5,720 feet.

1.0	—	—	—	—	—	—	—	—	10	—	—	1	1	—	—	1	3	3	11	2*
1.0	—	—	—	—	—	—	—	—	22	—	—	—	2	—	1	11	18	4	17	3
1.8	—	—	—	—	—	—	—	—	17	—	—	6	—	—	1	8	23	5	5	14
9.4	0.13	0.12	6th	2	—	1	1	—	14	—	—	1	1	—	—	3	30	12	6	7
3.0	0.81	0.41	1st	5	—	2	2	—	8	—	—	—	—	—	—	1	14	3	1	11†

\* 11 days only.

† 15 days only.

## Appendix

## Annual Abstract of Meteorological Observations taken

FORT NAPIER, NATAL.

Lat. 29° 35' S.

Month.	Mean Daily Air Tem- perature.	Mean Pressure.	Air Temperature.								Tension of Vapour.	Relative Humidity.		
			Mean, 9 a.m.	Means of		Abs. Min.		Abs. Max.		Per Cent.		Min.		
				Min.	Max.	Temp.	Day.	Temp.	Day.			Mean.	Per Cent.	Day.
January	72.3	27.582	73.1	61.8	82.8	56.0	23rd	94.9	29th	.652	76	50	29th	
February	74.2	27.604	75.3	63.2	85.2	52.1	2nd	96.0	25th	.629	68	41	19th	
March	73.5	27.682	74.6	62.0	85.0	55.0	28th	93.0	15th	.617	67	37	8th	
April	66.2	27.681	67.0	52.6	79.8	45.0	21st	88.0	8th	.407	59	39	22nd	
May	61.2	27.745	61.8	47.2	75.2	38.8	4th	90.0	25th	.331	58	32	26th	
June	59.5	27.767	60.3	43.3	75.7	36.0	15, 18th	83.2	12th	.354	56	34	26th	
July	57.9	27.841	58.4	42.3	73.5	31.9	11th	82.0	23rd	.318	59	34	31st	
August	63.2	27.769	62.5	46.6	76.8	36.0	2nd	99.0	28th	.366	62	32	7th	
September	63.2	27.644	64.5	52.0	74.4	42.5	30th	89.8	16th	.399	66	35	15th	
October	64.2	27.679	66.5	53.3	75.1	42.2	9th	90.8	29th	.425	67	34	11th	
November	69.7	27.629	71.3	59.8	79.6	50.5	9th	97.3	3rd	.539	75	39	7th	
December	71.2	27.585	71.8	60.4	82.0	52.8	26th	95.5	9th	.545	70	43	21st	
Year	66.4	27.682	67.3	54.0	78.8	31.9	11th July.	99.0	28th Aug.	.465	65	32	26 May 7 Aug.	

## SIERRA LEONE.

Lat. 8° 29' 30' N.

January	79.0	30.238	80.3	68.9	89.1	63.0	6th	83.0	1st	.822	74	49	25th
February	80.0	30.245	81.0	68.7	91.3	65.0	4th	96.7	26th	.772	63	40	10th
March	79.9	30.233	82.5	69.3	90.5	66.2	22nd	93.0	6, 18th	.821	67	44	28th
April	79.4	29.866	83.2	68.6	90.2	64.6	26th	93.0	9th	.806	67	57	10, 30
May	77.4	29.691	82.4	65.4	89.4	58.2	26th	92.3	3rd	.848	73	52	3rd
June	79.6	29.676	81.3	71.4	87.8	62.0	3rd	91.0	21st	.852	78	59	21st
July	79.6	29.699	77.4	72.8	86.4	69.0	1st	89.0	8, 18th	.800	83	61	9th
August	78.1	29.720	77.9	72.2	84.0	70.0	20, 24th	88.0	12th	.824	83	60	25th
September	79.1	29.706	78.8	73.5	84.7	71.0	4, 15, 18	90.0	17th	.836	82	60	17th
October	79.3	29.678	79.2	72.2	86.4	69.0	13th	90.0	22nd	.824	89	64	14, 22
November	81.1	29.683	82.0	74.2	88.0	71.0	10th	90.0	4, 30th	.835	74	58	23rd
December	80.2	29.671	80.0	74.1	86.3	66.0	11th	90.4	5th	.800	73	42	16th
Year	79.4	29.842	80.5	70.9	87.8	58.2	26th May.	96.7	26th Feb.	.821	75	40	10th Feb.

## BARBADOS.

Lat. 13° 7' 39' N.

January	74.7	30.003	79.0	64.4	85.0	61.0	9th	86.6	11th	.649	61	46	22nd
February	75.3	30.020	79.5	65.0	85.6	58.4	9th	88.0	28th	.644	60	43	8th
March	75.0	30.036	80.7	63.6	86.4	57.0	13th	88.4	21st	.606	58	39	17th
April	76.5	30.027	82.2	66.0	87.0	58.8	14th	89.2	16th	.659	58	41	14th
May	77.7	30.009	82.8	68.4	87.0	65.6	9th	89.2	23rd	.736	65	49	3rd
June	77.7	30.025	83.1	68.0	87.4	66.4	9, 12th	89.8	22nd	.763	67	53	5th
July	77.7	29.999	83.3	67.9	87.5	65.0	17th	90.4	1st	.813	69	53	19th
August	77.4	29.992	85.9	67.4	87.4	61.8	27th	89.5	2nd	.834	72	57	2nd
September	78.1	29.963	84.1	67.6	88.6	66.0	18, 29th	90.2	3rd	.824	69	55	1st
October	78.1	29.913	84.0	67.8	89.4	66.0	1st	90.8	6th	.835	71	49	1st
November	77.0	29.963	83.4	66.3	87.9	60.0	24th	90.5	4th	.762	64	46	22nd
December	75.2	29.965	80.8	65.0	85.4	57.0	7th	87.8	11th	.712	65	47	5th
Year	76.7	29.996	82.4	66.5	87.0	57.0	13 Mar. 7th Dec.	90.8	6th Oct.	.736	65	39	17th Mar.

No. XII.—*continued.*

at Netley and Foreign Stations in the Year 1893.

Long. 30° 20' E. Height of Barometer Cistern above Sea, 2,220 feet.

Mean Amount of Cloudiness.	Rainfall.			Weather.								Wind.								
	Total.	Max.	Day.	Number of Days of								Number of Observations under each Point per Month.								
				Rain.	Snow.	Hail.	Thunder Storm.	Fog.	Clear Sky.	Overcast.	Gales.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm.
7.0	11.83	2.47	2nd	21	—	1	5	—	—	16	—	1	3	1	—	5	3	4	6	39
4.6	5.84	1.92	7th	12	—	1	6	—	7	8	—	3	—	2	—	—	—	1	—	50
4.8	4.93	1.11	24th	13	—	—	4	—	7	5	—	—	—	—	—	—	—	—	—	62
2.7	4.73	2.45	11th	6	—	2	—	—	17	3	—	—	—	—	1	—	3	—	3	53
2.7	1.37	0.75	28th	5	—	—	—	—	18	4	—	—	1	—	—	1	5	3	3	49
0.9	—	—	—	—	—	—	—	—	24	—	—	—	—	2	1	1	—	—	—	56
2.0	0.56	0.35	2nd	2	—	—	—	—	21	3	—	—	—	—	—	—	—	1	—	61
4.6	1.19	0.42	11th	5	—	—	—	—	8	5	—	—	18	—	3	1	1	—	5	34
5.4	7.72	2.75	27th	14	—	—	2	—	4	6	—	—	8	1	3	—	3	—	3	42
5.0	6.97	1.80	7th	17	—	—	5	—	4	—	—	1	4	1	—	—	3	1	2	50
6.3	9.67	2.65	19th	17	—	—	7	—	2	10	—	1	3	4	1	—	—	—	—	51
5.8	7.04	2.00	26th	18	—	—	8	—	4	9	—	—	1	5	1	—	—	—	—	54
4.3	61.85	2.75	27th Sept.	130	—	4	39	—	116	69	—	6	38	16	10	8	18	10	23	601

Long. 13° 9' 17" W. Height of Barometer Cistern above Sea, 224 feet.

2.4	4.15	3.81	3rd	4	—	—	2	—	4	—	—	6	3	11	2	9	2	15	1	13
1.6	—	—	—	—	—	—	—	—	16	—	—	5	—	12	2	9	4	16	—	6
2.0	3.41	2.75	6th	3	—	—	2	—	6	—	—	3	—	9	—	14	8	22	—	6
2.2	5.23	1.80	22nd	8	—	—	2	—	7	—	—	3	—	6	3	15	4	17	2	10
1.9	16.43	2.86	25th	18	—	—	—	—	—	—	—	1	1	10	—	12	4	22	2	10
2.3	13.28	3.50	26th	23	—	—	10	—	—	—	—	5	1	12	2	12	3	14	—	11
2.4	35.06	3.92	11th	28	—	—	1	—	—	—	—	7	—	5	2	9	4	21	3	11
2.4	42.22	5.62	23rd	30	—	—	2	—	1	—	—	4	—	6	—	12	6	22	4	8
2.5	21.73	4.99	27th	26	—	—	7	—	—	—	—	5	—	6	2	12	6	20	3	6
2.6	25.00	4.50	29th	29	—	—	12	—	—	—	—	4	2	16	3	10	5	17	2	3
2.8	2.00	0.74	24th	11	—	—	9	—	—	—	—	—	—	11	6	9	5	15	2	6
2.8	3.90	0.96	7th	7	—	—	4	—	—	—	—	7	3	14	3	8	3	10	1	13
2.3	172.41	5.62	23rd Aug.	187	—	—	63	—	34	—	—	56	10	118	25	131	54	211	22	103

Long. 59° 40' 8" W. Height of Barometer Cistern above Sea, 30 feet 8 inches.

5.0	1.51	0.34	21st	15	—	—	—	—	1	—	—	36	21	4	—	—	—	—	—	1
4.7	1.30	0.32	6th	14	—	—	—	—	—	—	—	26	29	1	—	—	—	—	—	6
4.4	0.65	0.21	23rd	9	—	—	—	—	—	—	—	32	19	—	—	4	1	—	—	2
5.2	1.60	0.45	16th	12	—	—	—	—	—	—	37	16	4	—	—	—	—	1	2	6
5.0	3.60	1.19	6th	17	—	—	—	—	1	1	—	16	36	10	—	—	—	—	—	—
5.4	4.43	1.05	6th	18	—	—	2	—	—	—	—	33	17	2	—	—	—	—	—	8
5.3	6.88	1.08	2nd	24	—	—	—	—	—	—	—	30	20	—	—	—	—	—	—	12
5.1	11.42	2.40	12th	18	—	—	—	—	3	—	—	19	5	3	4	2	1	—	1	25
4.4	4.47	1.23	15th	21	—	—	—	—	—	—	—	32	17	4	3	—	—	—	—	4
5.0	6.28	0.86	8th	23	—	—	—	—	—	—	—	23	5	—	3	—	2	—	2	27
4.3	3.53	1.70	16th	15	—	—	2	—	2	—	—	28	12	1	1	—	—	—	—	18
4.6	3.94	1.02	20th	21	—	—	—	—	1	—	—	2	38	18	—	—	1	—	—	3
4.9	50.01	2.40	12th Aug.	207	—	—	4	—	4	6	—	41	329	203	25	11	6	5	4	106

## Annual Abstract of Meteorological Observations taken

UP. PARK CAMP, JAMAICA.

Lat. 17° 59' 0" N.

Month.	Mean daily Air Temperature.	Mean Pressure.	Mean, 9 a.m.	Air Temperature.						Tension of Vapour.	Relative Humidity.		
				Means of		Abs. Min.		Abs. Max.			Per Cent.	Min.	
				Min.	Max.	Temp.	Day.	Temp.	Day.			Mean.	Per Cent.
January	78° 0	29° 763	82° 1	66° 0	90° 0	61° 0	31st	83° 0	21, 22, 29	643	56	45	18th
February	78° 0	29° 794	81° 9	66° 2	89° 8	61° 0	1st	83° 5	51th	639	57	41	16th
March	78° 1	29° 805	83° 2	66° 3	89° 9	61° 0	2nd	84° 5	9th	622	59	43	8, 8, 16
April	79° 1	29° 775	83° 9	66° 2	89° 0	60° 5	6th, 16th	83° 5	7th	674	60	45	5th
May	78° 0	29° 764	80° 3	66° 5	89° 5	62° 0	29th	84° 5	1st	710	56	48	16th
June	80° 0	29° 736	85° 6	69° 7	90° 3	67° 0	12th	83° 5	23rd	701	62	45	20th
July	80° 5	29° 740	85° 3	69° 9	91° 3	68° 0	15, 23	85° 5	24th	749	61	44	4th
August	81° 8	29° 715	85° 3	71° 1	92° 5	67° 0	27th	87° 0	24th	772	62	44	11th
September	82° 5	29° 704	86° 2	71° 5	93° 5	68° 0	25th	88° 0	14th	760	61	47	22, 26
October	80° 2	29° 643	85° 1	69° 9	91° 5	65° 5	8th	85° 0	3, 17th	733	67	51	11th
November	79° 5	29° 719	83° 5	68° 2	90° 8	62° 5	17, 18	85° 5	18th	767	69	45	14th
December	79° 7	29° 753	84° 7	70° 0	89° 4	68° 0	5, 6, 27	94° 0	8, 19th	745	62	49	30th
Year	79° 6	29° 743	84° 0	68° 7	90° 6	61° 0	31 Jan. 1 Feb. 2 Mar.	98° 0	14th Sept.	715	62	41	16th Feb.

## NEWCASTLE, JAMAICA.

Lat 18° 0' 6" N.

January	61° 8	26° 334	No instruments.	51° 7	71° 9	47° 5	18th	78° 5	29th	No instruments.	—	—	—	—
February	62° 6	26° 341		51° 7	73° 5	48° 7	8th	83° 0	23rd					
March	64° 6	26° 353		50° 5	78° 7	47° 2	11th	87° 2	17th					
April	64° 8	26° 351		52° 3	77° 3	50° 1	15th	85° 4	20th					
May	66° 1	26° 341		54° 1	78° 1	52° 1	8rd	84° 7	6th					
June	66° 9	26° 339		54° 9	78° 9	53° 0	16th							
July	69° 2	26° 350		55° 7	82° 7	54° 0	27th	88° 5	22nd					
August	69° 9	26° 332		56° 5	83° 3	53° 8	13th	87° 2	17th					
September	69° 8	26° 422		56° 1	83° 5	54° 2	25th	89° 2	8th					
October	68° 6	26° 339		55° 5	81° 7	53° 4	11th	87° 0	19th					
November	67° 7	26° 334		54° 6	80° 8	52° 3	22nd	86° 0	7th					
December	65° 7	26° 326		52° 5	78° 9	48° 5	31st	86° 1	25th					
Year	66° 5	26° 347	—	53° 8	79° 1	47° 2	11th March	—	—	—	—	—	—	

\* Maximum thermometer became unserviceable on the 4th June.

## MORNE FORTUNE, ST. LUCIA.

Lat. 14° 0' 13" N.

January	75·7	29° 238	74·7	68·2	83·2	62·2	27th	86·8	21st	624	71	48	21st
February	74·8	29° 269	75·2	67·8	81·8	65·8	9th	82·4	28th	651	74	55	27th
March	70·0	29° 264	77·0	70·4	81·6	67·6	13th	84·0	14th	672	71	53	13th
April	74·9	29° 274	76·0	67·4	82·4	57·2	19th	86·2	10, 17	622	67	50	16th
May	76·5	29° 241	77·6	71·1	81·9	65·4	3rd	83·6	11, 19	725	74	60	31st
June	77·2	29° 258	78·2	72·2	82·2	70·4	6th	84·0	13th	750	75	61	25th
July	76·0	29° 232	79·5	72·1	79·9	68·2	5th	86·2	30th	777	77	64	9th
August	78·7	29° 228	80·2	72·6	84·8	68·0	12th	87·6	21st	785	75	63	18th
September	78·6	29° 221	80·5	72·2	85·0	70·2	7, 14th	86·6	2nd	782	74	61	30th
October	78·9	29° 144	80·8	72·8	85·0	70·0	12th	87·2	2nd	794	74	58	6th
November	78·2	29° 191	79·1	71·8	84·6	69·0	22nd	87·6	7, 14th	760	75	61	4th
December	75·8	29° 146	76·6	69·9	81·7	68·0	6, 8, 31	85·2	6th	683	74	62	7th
Year	76·8	29° 225	77·9	70·7	82·8	57·2	19th April	87·6	21 Aug. 7, 14th Nov.	720	73	48	21st Jan.

## No. XII.—continued.

at Netley and Foreign Stations in the Year 1893.

Long. 76° 56' W. Height of Barometer Cistern above Sea, 245 feet.

Mean Amount of Cloudiness.	Rainfall.			Weather.									Wind.								
	Total.	Max.	Day.	Number of Days of									Number of Observations under each Point per Month.								
				Rain.	Snow.	Hail.	Thunder Storm.	Fog.	Clear Sky.	Overcast.	Gales.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm.	
2.2	0.71	0.30	29th	8	—	—	—	—	11	—	—	—	1	7	—	26	—	15	—	9	5
3.2	0.97	0.36	6th	5	—	—	1	—	4	—	—	—	1	2	—	21	7	12	1	2	10
2.6	0.46	0.21	28th	4	—	—	—	—	12	—	—	—	5	—	—	27	13	2	1	4	10
3.8	2.62	0.90	8th	12	—	—	1	—	5	—	—	—	3	—	—	19	5	4	1	1	27
5.1	3.53	1.58	3rd	16	—	—	4	—	5	3	—	—	3	6	—	17	1	3	—	1	51
4.2	5.23	2.82	25th	14	—	—	—	—	4	1	—	—	3	2	—	25	10	1	—	—	19
4.2	6.50	2.71	6th	14	—	—	—	—	1	—	—	—	1	—	4	29	5	4	2	3	14
4.7	2.67	0.62	27th	12	—	—	—	—	9	—	—	—	3	—	—	22	8	2	3	2	22
5.2	2.96	1.90	25th	11	—	—	4	—	1	3	—	—	—	5	3	21	4	7	2	3	15
4.6	12.15	2.10	22nd	21	—	—	—	—	2	—	—	—	—	6	1	14	2	3	—	1	35
5.0	4.08	0.72	10th	14	—	—	—	—	2	—	—	—	—	3	—	20	—	—	—	—	35
3.7	3.77	1.90	24th	14	—	—	4	—	6	1	—	—	2	1	1	34	4	—	1	—	19
4.0	45.70	2.82	25th June	145	—	—	39	—	50	17	—	23	32	9	275	59	55	11	26	240	

Long. 76° 0' 42" W. Height of Barometer Cistern above Sea, 3,800 feet.

4.6	1.44	0.26	17th	16	—	—	1	—	3	—	—	6	6	—	—	—	—	—	4	40	
5.3	8.52	2.61	2nd	17	—	—	—	—	3	9	—	—	3	13	1	—	—	—	—	39	
4.4	0.80	0.33	29th	9	—	—	—	—	3	—	—	15	12	1	—	—	—	—	—	34	
7.3	3.37	1.82	8th	19	—	—	1	—	1	—	—	8	3	10	1	—	—	—	—	45	
7.0	17.11	3.04	31st	24	—	—	5	—	—	10	—	2	9	27	5	1	—	—	—	18	
6.0	5.13	1.15	17th	20	—	—	—	—	3	5	—	1	2	12	7	—	—	—	—	38	
6.6	12.41	4.42	6th	16	—	—	5	—	—	7	1	4	3	8	2	—	—	—	1	44	
5.0	7.15	1.60	23rd	18	—	—	6	—	—	7	1	3	8	10	10	—	1	—	—	30	
6.7	4.02	1.15	30th	19	—	—	3	—	—	8	—	3	6	17	2	—	1	—	1	30	
7.3	8.66	1.72	8th	27	—	—	4	—	—	11	—	5	10	11	1	—	1	—	4	30	
6.8	3.85	0.76	15th	19	—	—	3	—	1	7	—	6	8	5	1	—	1	—	5	34	
6.7	9.05	1.38	25th	24	—	—	2	—	—	10	1	10	12	5	1	—	—	—	5	29	
6.1	84.41	4.42	6th July	228	—	—	35	—	13	96	3	96	82	125	31	1	4	—	20	411	

Long. 61° 0' 25" W. Height of Barometer Cistern above Sea, 744 feet.

5.7	4.56	0.92	31st	23	—	—	—	—	—	—	—	19	15	12	—	—	—	—	—	2*	
6.2	6.47	0.96	1st	19	—	—	—	—	—	—	—	—	20	7	13	—	—	—	1	15	
4.8	9.65	3.24	16th	19	—	—	—	—	—	—	—	—	5	19	5	2	—	—	—	31	
4.1	3.38	0.49	23rd	15	—	—	2	—	—	—	—	—	17	2	5	—	3	—	1	32	
5.8	9.05	1.63	23rd	20	—	—	—	—	—	—	—	—	4	16	14	2	—	—	—	26	
5.5	10.63	1.66	3rd	24	—	—	—	—	—	—	—	1	10	3	9	—	—	—	—	37	
5.5	18.51	1.86	5th	28	—	—	—	—	—	—	—	—	1	1	5	—	—	—	—	55	
5.0	12.84	5.70	12th	19	—	—	—	—	—	—	—	—	1	—	13	3	1	—	—	44	
5.7	11.97	2.00	6th	24	—	—	—	—	—	—	—	—	—	1	6	1	—	—	—	52	
5.8	8.42	2.30	8th	19	—	—	—	—	—	1	—	—	—	—	6	2	—	—	—	54	
5.9	11.44	3.42	13th	22	—	—	—	—	—	2	—	1	23	6	4	—	—	—	—	26	
6.1	6.88	1.34	2nd	26	—	—	—	—	1	3	—	—	41	12	4	—	1	—	—	2	
5.5	113.80	5.70	12th Aug.	258	—	—	2	1	6	—	—	23	137	79	84	10	5	—	2	376	

\* 24 days only.

## Appendix

## Annual Abstract of Meteorological Observations taken

BERMUDA.

Lat. 32° 17' 40" N.

Month.	Mean Daily Air Tem- perature.	Mean Pressure.	Air Temperature.								Tension of Vapour.	Relative Humidity.		
			Mean 9 a.m.	Means of		Abs. Min.		Abs. Max.		Per Cent.		Min.		
				Min.	Max.	Temp.	Day.	Temp.	Day.	Mean.		Per Cent.	Day.	
January -	61·4	29·868	61·5	55·4	67·4	47·2	18th	70·7	7, 14th	·403	72	47	26th	
February -	62·0	30·047	63·2	57·3	66·9	49·5	22nd	74·4	12th	·410	70	55	7, 19, 23, 27	
March -	62·1	29·867	62·2	56·2	68·0	49·0	1st	79·9	24th	·425	75	51	3rd	
April -	65·6	30·014	67·6	60·0	71·2	55·7	11th	77·3	29, 30th	·539	78	64	19th	
May -	70·3	29·906	72·8	63·9	76·7	58·3	12th	81·6	27th	·664	81	63	20th	
June -	75·9	29·960	78·0	70·2	81·6	67·1	4th	84·9	18, 29th	·792	81	67	23, 25	
July -	78·1	29·942	79·1	72·6	83·6	69·8	13th	86·8	20th	·840	81	70	5th	
August -	79·5	29·955	81·0	73·8	85·2	64·5	17th	83·3	10th	·887	82	71	17th	
September	73·7	29·740	76·7	70·7	76·7	64·8	24th	87·4	2nd	·757	79	56	3rd	
October -	71·9	29·882	73·7	68·1	75·7	63·0	1st	82·2	16th	·631	75	54	17th	
November	67·1	29·942	68·3	63·0	71·2	58·3	22nd	77·1	9th	·506	72	53	17th	
December -	65·2	30·085	65·6	60·8	69·6	52·6	28, 29th	74·7	1st	·488	73	53	1st	
Year -	69·4	29·939	70·8	64·3	74·5	47·2	18th Jan.	88·3	10th Aug.	·612	77	47	26th Jan.	

FORT CANNING, SINGAPORE.

Lat. 1° 16' 0" N.

January -	78·4	29·710	79·1	71·3	85·5	70·3	3rd	92·0	10th	·749	74	51	4th	
February -	80·0	29·748	80·6	72·0	88·0	69·4	22nd	91·2	24, 25th	·740	69	52	20th	
March -	80·6	29·742	82·3	73·0	88·2	71·6	12, 13th	91·2	31st	·800	68	50	3rd	
April -	81·6	29·709	82·6	74·2	89·0	71·0	25, 30th	92·5	14th	·859	73	53	12th	
May -	82·9	29·713	83·0	74·8	91·0	71·6	12th	94·0	17, 18th	·860	68	56	7, 16	
June -	83·4	29·698	82·7	78·0	88·8	69·9	19th	93·0	18th	·864	75	59	3rd	
July -	81·1	29·710	82·6	74·2	88·0	72·0	2, 3, 4th	92·0	26th	·869	76	53	26th	
August -	81·4	29·717	83·0	74·0	88·8	70·5	11th	92·2	14th	·883	74	52	3rd	
September	81·9	29·728	82·9	74·3	89·5	70·0	4th	93·0	11th	·844	73	42	27th	
October -	80·8	29·727	82·8	73·1	88·5	71·0	23rd	92·5	10th	·847	73	55	2nd	
November	79·7	29·736	80·4	72·8	86·6	70·5	30th	91·6	5th	·819	77	57	5th	
December	78·3	29·746	79·4	71·6	85·0	70·0	15, 25th	89·4	24, 25th	·785	77	59	8, 12	
Year -	80·8	29·723	82·0	73·6	88·1	69·4	22nd Feb.	94·0	17, 18th May,	·828	73	42	27th Sept.	

No. XII.—*continued.*

at Netley and Foreign Stations in the Year 1893.

Long. 64° 47' 0" W. Height of Barometer Cistern above Sea, 151 feet.

Mean Amount of Cloudiness.	Rainfall.			Weather.									Wind.									
	Total.	Max.	Day.	Number of Days of									Number of Observations under each Point per month.									
				Rain.	Snow.	Hail.	Thunder Storm.	Fog.	Clear Sky.	Overcast.	Gales.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm.		
5.9	6.64	2.97	26th	17	—	—	—	—	3	7	—	1	6	3	3	1	15	5	14	14		
5.1	2.12	0.40	19th	8	—	—	—	—	5	2	—	3	10	3	—	1	11	2	11	15		
5.6	9.53	2.79	19th	13	—	—	3	—	2	7	—	6	8	2	4	—	19	1	10	12		
5.0	2.55	1.06	6, 24	7	—	—	—	—	3	5	—	2	11	2	5	2	21	—	7	10		
5.0	7.10	3.30	19th	10	—	—	1	—	6	5	—	1	6	—	1	—	38	—	7	9		
4.7	9.80	4.93	1st	6	—	—	—	—	2	4	—	1	2	—	6	—	17	2	8	24		
5.0	5.12	1.04	13th	13	—	—	1	—	3	4	—	1	—	1	2	—	20	4	3	31		
4.6	4.86	1.71	13th	12	—	—	—	—	4	2	—	—	1	—	13	6	14	1	2	25		
6.1	3.18	0.99	4th	13	—	—	1	—	1	8	—	3	6	6	8	2	4	3	1	27		
6.2	2.41	0.63	25th	14	—	—	—	—	—	6	—	5	14	8	8	4	2	2	4	15		
6.5	5.30	1.17	28th	18	—	—	—	—	4	8	—	11	11	4	1	8	7	1	5	12		
5.4	4.16	2.21	19th	11	—	—	—	—	3	6	—	10	5	2	6	11	8	5	2	13		
5.4	62.77	4.93	1st June.	144	—	—	6	—	36	64	—	44	80	31	57	35	176	26	74	207		

Long. 103° 53' 0" E. Height of Barometer Cistern above Sea, 110 feet.

6.8	23.70	7.50	18th	14	—	—	3	—	—	6	—	—	22	36	2	—	—	—	1	1	—
6.0	5.06	2.18	11th	9	—	—	5	—	—	2	—	—	16	33	2	—	—	—	1	4	—
6.0	4.67	1.48	20th	10	—	—	6	—	—	1	—	—	12	24	15	9	—	1	—	1	—
7.5	5.38	1.10	20th	15	—	—	7	—	—	8	—	—	13	21	2	20	1	—	1	2	—
6.2	5.29	2.40	12th	7	—	—	14	—	—	3	—	—	—	—	—	4	18	20	16	4	—
7.6	5.50	1.05	8th	14	—	—	11	—	—	10	—	—	—	—	—	—	24	17	17	2	—
8.0	8.24	2.38	2nd	18	—	—	13	—	—	13	—	—	—	—	—	4	13	32	7	6	—
7.8	9.28	3.60	19th	12	—	—	9	—	—	11	—	—	1	—	2	6	23	19	3	8	—
8.0	5.80	1.85	22nd	11	—	—	15	—	—	12	—	—	2	—	—	5	15	24	7	7	—
7.8	9.60	2.30	23rd	16	—	—	11	—	—	10	—	—	16	—	—	3	23	6	8	6	—
8.1	5.96	2.25	27th	14	—	—	14	—	—	15	—	—	43	1	3	2	—	—	1	10	—
8.2	16.58	3.75	19th	16	—	—	2	—	—	16	—	—	29	27	—	—	—	—	—	6	—
7.3	105.04	7.50	18th Jan.	156	—	—	110	—	—	107	—	—	164	142	26	53	117	119	62	57	—



## Appendix

## Annual Abstract of Meteorological Observations taken

HONG KONG.

Lat. 22° 16' 20" N.

Month.	Mean daily Air Tem- perature.	Mean Pressure.	Air Temperature.								Tension of Vapour.	Relative Humidity.		
			Mean, 9 a.m.	Means of		Abs. Min.		Abs. Max.		Per Cent.		Min.		
				Min.	Max.	Temp.	Day.	Temp.	Day.					
January -	58°0	30°065	57°4	52°7	63°3	34°0	18th	76°0	10th	°401	78	51	1st	
February -	58°1	30°138	57°2	54°2	62°0	46°0	28th	70°0	6th	°385	81	62	3, 4th	
March -	65°2	30°038	65°1	59°9	70°5	49°0	1st	82°0	29th	°503	80	61	16, 20th	
April -	73°7	29°909	73°8	68°6	78°8	57°0	7th	96°0	12th	°697	82	69	8th	
May -	77°7	29°834	78°2	73°2	82°2	67°0	3rd	92°0	16th	°786	82	60	26th	
June -	83°9	29°834	82°8	79°0	88°9	71°0	20th	92°0	7th	°944	78	69	10, 28, 29th	
July -	83°5	29°749	83°6	77°9	89°1	74°0	5th	93°0	12, 30th	°936	81	72	19th	
August -	83°9	29°732	84°5	78°6	89°2	74°0	9th	92°0	12th	°944	79	69	19, 31st	
September	81°9	29°747	82°9	76°4	87°4	72°0	11, 12th	93°0	3rd	°863	78	64	11, 19th	
October -	77°8	29°960	79°1	72°1	83°5	67°0	28th	89°0	10th	°717	73	56	28th	
November	70°8	30°166	73°5	63°7	77°9	54°0	26th	85°0	2nd	°519	63	49	30th	
December	64°4	30°176	66°6	56°4	72°4	49°0	8th	78°0	30th	°428	65	50	3, 5th	
Year	73°2	29°946	73°7	67°7	78°8	34°0	18th Jan.	93°0	12, 30th July, 3 Sept.	°679	77	40	30th Nov.	

## SANITARIUM, HONG KONG.

Lat. 22° 16' 20" N.

January													
February													
March													
April													
May													
June	75°6	—	—	66°2	85°0	63°0	25th	89°0	8th	—	—	—	—
July	77°1	—	—	69°6	84°6	62°5	4th	89°0	30th	—	—	—	—
August	79°4	—	—	73°3	85°5	71°0	22nd	90°0	8th	—	—	—	—
September	77°5	—	—	71°2	83°8	65°0	9th	91°5	3rd	—	—	—	—
October	—°	—	—	—	—	—	—	—	—	—	—	—	—
† November	67°3	—	—	60°9	73°7	49°0	25th	81°0	6th	—	—	—	—
December													

\* Observatory blown down by typhoon.

† 28 days only. Sanitarium closed 29th.

## No. XII.—continued.

at Netley and Foreign Stations in the Year 1893.

Long. 114° 8' 16" E. Height of Barometer Cistern above Sea, 18 feet.

Mean Amount of Cloudiness.	Rainfall.			Weather.									Wind.								
	Total.	Max.	Day.	Number of Days of									Number of Observations under each Point per Month.								
				Rain.	Snow.	Hail.	Thunder Storm.	Fog.	Clear Sky.	Overcast.	Gales.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm.	
5.8	1.57	0.46	15th	8	—	—	—	—	9	15	—	7	20	16	—	—	1	4	2	12	
8.2	0.71	0.25	19th	7	—	—	—	—	2	20	—	3	14	10	—	—	1	2	—	26	
7.0	3.19	1.30	16th	8	—	—	—	—	4	16	—	2	16	20	—	—	1	—	—	14	
6.0	11.30	4.06	28th	13	—	—	3	—	6	10	—	1	7	24	1	—	—	4	—	23	
6.0	19.81	4.33	28th	14	—	—	—	—	7	13	—	—	1	31	1	1	5	4	—	19	
4.6	3.47	1.42	17th	14	—	—	—	—	13	6	—	—	—	19	1	—	1	10	—	29	
5.7	28.44	5.30	23rd	21	—	—	3	—	9	10	—	2	4	12	1	—	3	13	—	27	
6.0	10.06	2.24	20th	15	—	—	3	—	5	11	—	—	3	25	6	1	12	6	3	6	
5.0	15.60	4.60	24th	16	—	—	2	—	11	11	2	2	10	12	7	1	5	8	3	12	
2.6	21.56	9.07	3rd	12	—	—	—	—	21	5	1	4	15	16	10	—	1	6	1	9	
0.5	—	—	—	—	—	—	—	—	27	—	—	4	25	14	8	—	—	2	—	7	
2.4	0.02	0.02	27th	1	—	—	—	—	18	2	—	2	18	21	1	—	—	2	1	17	
5.0	120.73	9.07	3rd Oct.	129	—	—	11	—	132	119	3	27	133	229	36	3	30	61	10	201	

Long. 114° 9' 16" E. Height of Barometer Cistern above Sea, 911 feet.

4.4	6.92	1.30	18th	12	—	—	—	—	1	2	—	16	25	1	—	—	1	—	11	6
6.1	23.95	5.86	23rd	22	—	—	4	—	—	8	—	12	20	3	2	—	6	3	7	9
5.5	11.15	2.45	27th	16	—	—	4	—	1	4	—	5	21	5	6	4	2	—	2	17
5.1	15.71	4.08	24th	20	—	—	1	—	5	5	—	3	20	1	6	1	1	1	—	27
4.8	22.06	7.13	3rd	16	—	—	—	—	1	3	1	7	33	7	9	2	1	—	—	3
2.6	0.02	0.02	6th	1	—	—	—	—	12	—	—	3	27	6	2	—	—	—	—	18

# ARMY MEDICAL DEPARTMENT.

## Appendix

### Summary of Results of Meteorological Observations

Stations.	Altitude, above Sea Level.		Latitude.		Longitude.		Mean Daily Air Temp.	Air Pressure corrected and reduced to 32° F.	Air Temperature.						Tension of Vapour.	Relative Humidity.		
									Means of		Abs. Min.		Abs. Max.			Per Cent.	Min.	
	ft.	° ' "	° ' "	° ' "	° ' "	° ' "	Mean, 9 a.m.	Min.	Max.	Temp.	Date.	Temp.	Date.	Mean.	Per Cent.	Date.		
Mediterranean: Gibraltar -	53	36 6 30 N.	5 20 53 W.	65° 8'	30° 17' 4"	64° 2'	59° 9'	71° 6'	41° 0'	16 Jan.	90° 0'	15 Aug.	461	71	35	15 Aug.		
Malta -	112	35 53 40 N.	14 30 54 E.	67° 2'	29° 00'	68° 1'	62° 7'	71° 4'	42° 0'	{ 5 Jan. } { 6 Feb. }	96° 0'	19 Sept.	504	69	31	20 Sept.		
Putari -	60	41 0 0 N.	29 3 0 E.	57° 2'	29° 8' 78"	56° 7'	48° 5'	66° 0'	14° 8'	7 Feb.	98° 6'	16 July	380	71	33	3 June		
Cyprus: Polymedia	460	34 40 0 N.	32 2 0 E.															
Mt. Troodos	5,720	34 55 0 N.	32 53 0 E.															
Col. Fort Napier.	2,220	29 35 0 S.	30 20 0 E.	66° 4'	27° 68' 2"	67° 3'	54° 0'	78° 8'	31° 9'	11 July	99° 0'	28 Aug.	465	65	32	{ 26 May } { 7 Aug. }		
La Leone -	224	8 29 30 N.	13 9 17 W.	79° 4'	29° 84' 2"	80° 5'	70° 9'	87° 8'	58° 2'	26 May	96° 7'	26 Feb.	821	75	40	10 Feb.		
St. Indies: Barbados -	30	13 7 39 N.	59 40 8 W.	76° 7'	29° 99' 6"	82° 4'	66° 5'	87° 0'	57° 0'	{ 15 Mar. } { 7 Dec. }	90° 8'	6 Oct.	736	65	39	17 Mar.		
Jamaica: Up. Park Camp.	245	17 59 0 N.	76 56 0 W.	79° 6'	29° 74' 3"	84° 0'	68° 7'	90° 6'	61° 0'	{ 31 Jan. } { 1 Feb. } { 2 Mar. }	98° 0'	14 Sept.	715	62	41	16 Feb.		
Newcastle	3,800	18 0 6 N.	76 0 42 W.	66° 5'	26° 34' 7"	—	53° 8'	79° 1'	47° 2'	11 Mar.	—	—	—	—	—	—		
St. Lucia -	744	14 0 13 N.	61 0 25 W.	76° 8'	29° 22' 5"	77° 9'	70° 7'	82° 8'	57° 2'	19 April	87° 6'	{ 21 Aug } { 7 & 14 Nov. }	720	73	46	21 Jan.		
Bermuda -	151	32 17 40 N.	64 47 0 W.	69° 4'	29° 93' 9"	70° 8'	64° 3'	74° 5'	47° 2'	18 Jan.	88° 3'	10 Aug.	612	77	47	26 Jan.		
Capers, Fort Manning.	110	1 16 0 N.	103 53 0 E.	80° 8'	29° 72' 3"	82° 0'	73° 6'	88° 1'	69° 4'	22 Feb.	94° 0'	{ 17 & 18 } { May }	828	73	42	27 Sept.		
Hong Kong -	18	22 16 20 N.	114 8 16 E.	73° 2'	29° 94' 6"	73° 7'	67° 7'	78° 8'	34° 0'	18 Jan.	93° 0'	{ 12 & 30 } { July } { 3 Sept. }	679	77	49	30 Nov.		
Antarctic.	911	22 16 20 N.	114 9 16 E.															

No. XII.—*continued.*

taken at Foreign Stations in the Year 1893.

Mean Account of Cloudiness.	Rainfall.			Weather.									Wind.									Remarks. No. of Months in which Observations were taken.
	Total.	Max.	Date.	Number of Days of								Number of Observations under each Point per Month.								Calm.		
				Rain.	Snow.	Hail.	Thunder Storm.	Fog.	Clear Sky.	Overcast.	Gales.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.			
4.9	26.26	2.28	21 Mar.	96	—	—	5	1	92	67	8	—	23	360	8	—	10	304	25	—	12 months.	
4.5	23.60	2.44	13 Nov.	82	—	1	14	—	100	36	—	9	37	17	42	3	11	32	56	523	12 „	
5.1	28.0	1.73	12 Jan.	132	27	6	19	14	81	89	—	78	282	55	21	76	132	8	16	62	12 „	
																				7	„	
																				4	„	
4.3	61.85	2.75	27 Sept.	130	—	4	39	—	116	69	—	6	38	16	10	8	18	10	23	601	12 „	
2.3	172.41	5.62	23 Aug.	187	—	—	63	—	34	—	—	56	10	118	25	131	54	211	22	103	12 „	
4.9	50.01	2.40	12 Aug.	207	—	—	4	—	4	6	—	41	329	203	25	11	6	5	4	106	12 „	
4.0	45.70	2.82	25 June	145	—	—	39	—	50	17	—	23	32	9	275	59	55	11	26	240	12 „	
6.1	84.41	4.42	6 July	228	—	—	35	—	13	86	3	56	82	125	31	1	4	—	20	411	12 „	
5.5	113.80	5.70	12 Aug.	258	—	—	—	2	1	6	—	23	137	79	84	10	5	—	2	376	12 „	
5.4	62.77	4.93	1 June	144	—	—	6	—	36	64	—	44	80	31	57	35	176	26	74	207	12 „	
7.3	105.04	7.50	18 Jan.	156	—	—	110	—	—	107	—	154	142	26	53	117	119	62	57	—	12 „	
5.0	120.73	9.07	3 Oct.	129	—	—	11	—	132	119	3	27	133	229	36	3	30	61	10	201	12 „	
																				6	„	

APPENDIX No. XIII.

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THE PARKES MEMORIAL PRIZE.

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Surgeon-General Sir T. LONGMORE, Kt., C.B., *President of Committee.*

Brigade-Surgeon-Lieut.-Colonel J. LANE-NOTTER, M.A., M.D., *Treasurer.*

Surgeon-Captain R. H. FIRTH, F.R.C.S., *Secretary.*

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*Prize Essay Gold Medallists.*

1883. Surgeon R. J. POLDEN, Indian Medical Service.

1886. Surgeon ANDREW DUNCAN, M.D., Indian Medical Service.

1889. Surgeon R. H. FIRTH, F.R.C.S., Medical Staff.

1892. Surgeon-Captain R. H. FIRTH, F.R.C.S., Army Medical Staff.

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The following is the subject for the next prize :—

“THE ETIOLOGY, PREVALENCE, AND PREVENTION OF DIPHTHERIA.”

*The Prize is Seventy-five Guineas in Money and a Bronze Medal, and is awarded Triennially.*

The Competition is open to all Medical Officers of the Army, Navy, and Indian Services of Executive Rank on full pay, with the exception of the Assistant Professors of the Army Medical School during their term of Office. Essays to be sent to the Secretary of the “Parkes Memorial Fund,” Royal Victoria Hospital, Netley, on or before the 31st day of December 1897. Each Essay to have a Motto, and to be accompanied with a sealed envelope bearing the same Motto and containing the name of the Competitor.

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## APPENDIX No. XIV.

## THE ALEXANDER MEMORIAL FUND.

## TRUSTEES.

Surgeon-Major-General Sir W. A. MACKINNON, K.C.B., Q.H.S., Director-General.  
 Surgeon-Major-General J. Jameson, M.D.  
 Deputy-Surgeon-General W. G. DON, M.D.

## COMMITTEE.

Surgeon-Major-General Sir W. A. MACKINNON, K.C.B., Q.H.S., Director-General, *President*.  
 Sir T. CRAWFORD, K.C.B., M.D., Q.H.S., *late* Director-General.  
 Deputy Surgeon-General J. A. BOSTOCK, C.B., Q.H.S.  
 Brigade-Surgeon-Lieutenant-Colonel A. F. S. CLARKE, M.D.  
 Surgeon-General J. IRVINE, M.D., Q.H.P.  
 Brigade-Surgeon-Lieutenant-Colonel W. JOHNSTON, M.D.  
 Deputy-Surgeon-General W. G. DON, M.D.  
 Surgeon-Major W. G. A. BEDFORD, M.B., *Honorary Secretary*.

## PRIZE ESSAY GOLD MEDALLISTS.

- 1870. Assistant Surgeon A. B. R. MYERS, Coldstream Guards.
- 1873. Surgeon F. H. WELCH, Medical Department.
- 1876. Surgeon-Major J. H. PORTER, Medical Department.
- 1879. Surgeon JOHN MARTIN, Medical Department.
- 1882. Surgeon-Major F. H. WELCH, Medical Department.
- 1885. Surgeon JOHN MARTIN, Medical Staff.
- 1888. Surgeon ROBERT HAMMILL FIRTH, Medical Staff.
- 1891. Surgeon ROBERT HAMMILL FIRTH, Medical Staff.
- 1894. Surgeon-Captain C. BIRT, Army Medical Staff.

At a meeting of the Committee held at 18, Victoria Street, S.W., on 26th April 1894, the prize of 50*l*. and Gold Medal of the value of 10*l*. was awarded to Surgeon-Captain C. Birt, Army Medical Staff, for the best Essay on "The Treatment of Wounds and Injuries of the Abdominal Viscera, as likely to be met with in Military Practice."

The essays of the unsuccessful competitors will be returned on application to the Honorary Secretary before 31st December 1896. Those of the unsuccessful competitors on the former occasion have, in accordance with the rules, been destroyed.

The subject for the next competition is "Micro-organisms as Factors in the Production of Phthisis; the Influence of Military Service upon the Disease, and Suggestions for its Prevention in the Army."

Essays must reach the President of the Committee on or before 31st December 1896.

Essays are to be legibly written, superscribed with a brief motto, and accompanied by a sealed envelope similarly superscribed, containing the name and address of the author.

No essay shall exceed in length fifty pages of ordinary printed octavo, which may be estimated as amounting to 20,000 words. This limit is exclusive of tables which may be added in the form of appendices.

The competition is limited to executive officers of the Army Medical Staff on full pay; but Professors and Assistant Professors at Netley are not allowed to compete while so employed.

By order of the Committee,

W. G. A. BEDFORD, Surgeon-Major, *Hon. Sec.*













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